

Clemson University



3 1604 019 981 655





Digitized by the Internet Archive
in 2013

<http://archive.org/details/insectpestsurvey09bure>

THE INSECT PEST SURVEY BULLETIN

A periodical review of entomological conditions throughout the United States
issued on the first of each month from March to December, inclusive.

Volume 9

March 1, 1929

Number 1

BUREAU OF ENTOMOLOGY
UNITED STATES
DEPARTMENT OF AGRICULTURE
AND
THE STATE ENTOMOLOGICAL
AGENCIES COOPERATING

COLLABORATORS OF THE UNITED STATES DEPARTMENT OF AGRICULTURE
ACTING AS REPORTERS FOR THE INSECT PEST SURVEY, 1929

Alabama	Dr. J. M. Robinson, Department of Entomology and Zoology, Alabama Polytechnic Institute, Auburn.
Arizona	Dr. Oscar Bartlett, State Entomologist, P. O. Box 1857, Phoenix.
Arkansas	Dr. W. J. Baerg, Entomologist, Agricultural Experiment Station, Fayetteville.
California	Dr. W. B. Herms, Head of Division of Entomology and Parasitology, University of California, Berkeley. Mr. H. S. Smith, Entomologist, Citrus Experiment Station, Riverside.
Colorado	Dr. C. P. Gillette, State Entomologist, State Agricultural College, Fort Collins.
Connecticut	Dr. W. E. Britton, State Entomologist, Agricultural Experiment Station, New Haven. Dr. E. P. Felt, Bartlett Research Laboratory, Stamford.
Delaware	Dr. H. L. Dozier, Entomologist, University of Delaware, Newark.
Florida	Dr. Wilmon Newell, Plant Commissioner, State Plant Board, Gainesville.
Georgia	Mr. M. S. Yeomans, State Entomologist, State Board of Entomology, Atlanta.
Haiti	Dr. Roger C. Smith, Head, Department of Entomology, Service Technique, Department of Agriculture, Port-au-Prince.
Idaho	Mr. Claude Wakeland, Entomologist, Entomological Field Station, Parma.
Illinois	Dr. W. P. Flint, Chief Entomologist, State Natural History Survey, Urbana. Dr. T. H. Frison, Curator, State Natural History Survey, Urbana.
Indiana	Prof. J. J. Davis, Purdue University, Lafayette.
Iowa	Dr. Carl J. Drake, Department of Zoology and Entomology, Iowa State College, Ames.
Kansas	Prof. Geo. A. Dean, Entomologist, Agricultural Experiment Station, Manhattan. Dr. H. B. Hungerford, Head, Department of Entomology, University of Kansas, Lawrence. Prof. J. W. McCulloch, Entomologist, Kansas State Agricultural College, Manhattan.
Kentucky	Prof. Harrison Garman, Entomologist, Agricultural Experiment Station, Lexington.
Louisiana	Dr. W. E. Hinds, Entomologist, Louisiana State University, Baton Rouge.
Maine	Mr. C. R. Phipps, Agricultural Experiment Station, Orono.
Maryland	Prof. E. N. Cory, State Entomologist, Maryland University, College Park.
Massachusetts	Mr. A. I. Bourne, Agricultural Experiment Station, Amherst. Dr. H. T. Fernald, Agricultural Experiment Station, Amherst.
Michigan	Prof. R. H. Pettit, Agricultural Experiment Station, East Lansing.
Minnesota	Prof. A. G. Ruggles, Entomologist, University Farm, St. Paul.

Mississippi	Prof. R. W. Harned, Entomologist, State Plant Board, Agricultural College.
Missouri	Dr. Leonard Haseman, Entomologist, Agricultural Experiment Station, Columbia.
Montana	Prof. R. A. Cooley, State Entomologist, Agricultural Experiment Station, Bozeman.
Nebraska	Prof. M. H. Swenk, State Entomologist, University of Nebraska, Lincoln.
	Mr. Don B. Whelan, Department of Entomology, University of Nebraska, Lincoln.
	Mr. L. M. Gates, Department of Agriculture, Lincoln.
Nevada	Mr. G. C. Schweiss, University of Nevada, Reno.
New Hampshire	Prof. W. C. O'Kane, Agricultural Experiment Station, Durham.
New Jersey	Dr. T. J. Headlee, State Entomologist, Agricultural Experiment Station, New Brunswick.
	Mr. Harry B. Weiss, Chief of Bureau of Statistics and Inspection, Department of Agriculture, Trenton.
New Mexico	Dr. J. R. Eyer, State Entomologist, College of Agriculture, State College.
New York	Prof. C. R. Crosby, Extension Entomologist, Cornell University, Ithaca.
	Mr. P. J. Parrott, Entomologist, Agricultural Experiment Station, Geneva.
North Carolina	Mr. Z. P. Metcalf, Head of Department of Zoology and Entomology, State College Station, Raleigh.
Ohio	Dr. E. W. Mendenhall, 97 Brighton Road, Columbus.
	Dr. J. S. Houser, Agricultural Experiment Station, Wooster.
	Dr. Herbert Osborn, Entomologist, Ohio State University, Columbus.
	Dr. R. C. Osburn, Entomologist, Ohio State University, Columbus.
	Mr. T. H. Parks, Extension Entomologist, Ohio State University, Columbus.
Oklahoma	Prof. C. E. Sanborn, Entomologist, Agricultural Experiment Station, Stillwater.
Oregon	Mr. Don C. Mote, Oregon Agricultural College, Corvallis.
Pennsylvania	Mr. A. B. Champlain, Bureau of Plant Industry, Harrisburg.
	Dr. T. L. Guyton, Department of Agriculture, Bureau of Plant Industry, Harrisburg.
	Mr. H. E. Hodgkiss, Extension Entomologist, Pennsylvania State College, State College.
	Mr. H. B. Kirk, Bureau of Plant Industry, Harrisburg.
	Mr. J. N. Knull, Bureau of Plant Industry, Harrisburg.
	Mr. G. F. MacLeod, Assistant Extension Entomologist, Pennsylvania State College, State College.
	Mr. Adonis A. Mathewson, Reitze Block, Meadville.
	Mr. F. F. Smith, Greenhouse Insect Laboratory, Easton Road, Willow Grove.
	Mr. J. R. Stear, 68 N. 6th St., Chambersburg.
	Mr. C. A. Thomas, Entomologist, Pennsylvania State College, Bustleton.
	Mr. H. N. Worthley, Pennsylvania State College, State College.

Rhode Island	Dr. A. E. Stone, Entomologist, Agricultural Experiment Station, Kingston.
South Carolina	Prof. Franklin Sherman, Division of Entomology and Zoology, Clemson College.
	Mr. M. L. Brunson, Extension Entomologist, Clemson College.
South Dakota	Prof. E. C. Severin, State Entomologist, Agricultural Experiment Station, Brookings.
Tennessee	Prof. G. M. Bentley, State Entomologist and Plant Pathologist, State Board of Agriculture, Knoxville.
Texas	Mr. F. L. Thomas, Agricultural Experiment Station, College Station.
Utah	Mr. H. J. Pack, Entomologist, Agricultural Experiment Station, Logan.
Virginia	Mr. P. J. Chapman, Entomologist, Virginia Truck Experiment Station, Norfolk.
	Prof. W. J. Schoene, State Entomologist, Crop Pest Commission, Blacksburg.
Washington	Prof. R. L. Webster, Head, Department of Zoology, State College of Washington, Pullman.
West Virginia	Prof. L. M. Peairs, Entomologist, Agricultural Experiment Station, Morgantown.
	Prof. W. E. Ramsey, State Entomologist, Agricultural Experiment Station, Morgantown.
Wisconsin	Mr. E. L. Chambers, State Entomologist, Room 14, Capitol Annex, Madison.
	Prof. H. F. Wilson, Entomologist, University of Wisconsin, Madison.
Wyoming	Mr. F. W. Boyd, Chief Deputy State Entomologist, Laramie.
Mexico	Dr. A. Dampf, Avenida Insurgentes 171, Mexico, D. F. Mexico.
	Dr. A. W. Morrill, Cajeme, Sonora, (California address: 815 Hill Street, Los Angeles.)

INSECT PEST SURVEY BULLETIN

Vol. 9

March 1, 1929

No.1

OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR JANUARY AND FEBRUARY, 1929

With this number we introduce Volume 9 of the Insect Pest Survey Bulletin. We are gratified to see the continued growth in both quantity and quality of data which we are receiving and the ever-increasing cooperative attitude of our reporters.

The Survey files now contain notes on over 6,000 species of insects. These notes are available to any of our collaborators investigating specific problems. We do not feel that it would be advisable to devote the time of our very limited personnel to extracting extensive information for students. On the other hand, we are in a position to assist any serious worker in matters of geographical distribution, host plants, or other ecological data, and hope that our collaborators will feel free to call upon the survey for such service.

We now feel that the most rapid strides that can be made in survey work in this country will be along the lines of developing adequate State surveys, which can much more efficiently gather data necessary for a comprehensive National Survey. Such surveys, where they are already established, are of invaluable assistance to the entomological workers of the State concerned. They assist them in approaching their program of work, in answering correspondence, and give them an appreciation of the unusual developments in the various parts of the territory which they cover.

Despite the general impression that surveys are not possible without the expenditure of considerable funds and time, initial work along this line can be inaugurated at very little expense, and the Federal Insect Pest Survey is in a position, after its eight years of experience, to offer suggestions to any of its collaborators interested in inaugurating this type of work.

During the early spring months there have been but few unusual developments. During the first week in January serious cutworm depredations were reported from the southernmost corner of Texas. About the middle of February cutworm damage was reported from the Texas Panhandle and central Alabama.

The abundance of the chinch bug continues at a very low ebb.

From the middle to the end of February some alarm was created in Georgia and North Carolina by the green bug. This insect was also questionably reported from the southern part of Oklahoma.

From the number of eggs observed in Pennsylvania and West Virginia there are indications that aphids on deciduous fruits will be more numerous than usual in that region this spring.

Winter mortality of the codling moth in experimental cages at Carbondale, Illinois, ran to 24 per cent of overwintering larvae.

Throughout the eastern half of Pennsylvania severe red spider infestation this year is indicated by the abundance of eggs now present on the trees.

An interesting account appears in this number of the Bulletin of the discovery of a biological variety of the pear leaf blister mite in southern California.

The finding of what is believed to be *Stephanoderes* attacking coffee beans in Haiti is of very considerable interest, as this insect is one of the most serious pests of coffee in countries where it occurs.

The vegetable weevil has been found in 7 new counties in Mississippi, one of which is but 3 counties south of the Tennessee State line. It has also been found in 5 additional counties in Alabama and one additional county in Florida.

The spotted cucumber beetle attracted considerable attention during the last week in January, and throughout February, in the gulf trucking sections of Alabama, Mississippi, and Louisiana.

The banded cucumber beetle was first discovered in California in 1924, and was again observed attacking peppers at San Diego in 1927. Record is made of these findings, as they do not seem to have been previously published.

Reports from Louisiana indicate that the hibernating population of the sugarcane borer is unusually small this year.

GENERAL FEEDERS

GRASSHOPPERS (*Acrididae*)

Arizona O. L. Barnes (February 23): Grasshoppers were seen on February 21. This is the first time I have noticed insects since freezing weather began, but I suppose that they have been active on other warm days. Two individuals were seen.

CUTWORMS (*Noctuidae*)

Alabama J. M. Robinson (February 18): At Auburn cutworms are present where vegetables have been grown. However, we have had very few requests for information on their control as yet.

Texas F. L. Thomas (January 9): A telegram received from Raymondville in Willacy County states that cutworms are doing lots of damage to onions. (February 20): Cutworms were reported as attacking wheat in the Texas Panhandle, February 12. Many complaints have been made in the Lower Rio Grande Valley of cutworms injuring vegetable crops.

CEREAL AND FORAGE CROP INSECTS

WHEAT

HESSIAN FLY (*Phytophaga destructor* Say)

Illinois J. H. Bigger (February 20): In the western part of the State moderate damage is expected during the spring of 1929 where wheat has been set back by winter. Vigorous growth will probably not suffer.

Kansas J. W. McColloch (February 19): The Hessian fly infestation is lower than it has been for several years. On the whole the average date of seeding was later. Lack of rain in August and September hindered seed-bed preparation. The absence of surface moisture held back sowing until rains in early October. While some fly can be found in nearly all parts of the State there has been very little damage. The heaviest infestation is apparently in the southeastern corner of the State.

CHINCH BUG (*Blissus leucopterus* Say)

Kansas J. M. McColloch (February 19): The chinch bug is at a very low ebb in Kansas. It is almost impossible to find bugs in hibernation this winter.

GREEN BUG (*Toxoptera graminum* Rond.)

South Carolina J. N. Tenhet (February 26): Seriously injuring a 7 acre field of oats at Brunson. About 25 per cent of "stand" now dead, and remainder going fast.

Georgia

M. S. Yecmans (February 12): We have had a large number of complaints of damage on oats and wheat recently near Atlanta, caused by what may be the green bug.

Oklahoma

C. E. Sanborn (February 15): I have heard some reports relative to the prevalence of green bugs in the southern part of the State, but no specimens have been received by this department.

APPLE GRAIN APHID (Rhopalosiphum prunifoliae Fitch)

Nebraska

M. H. Swenk (November 1 - January 1): A Richardson County farmer reported during the last week in November that patches in his winter wheat fields were dying out because of attack by a plant louse or aphid. Examination of specimens showed that the species concerned was the apple grain aphid.

PLAINS FALSE WIREWORM (Eleodes opaca Say)

Kansas

J. W. McCulloch (February 19): False wireworms probably caused more damage during the past fall than any other wheat insect. Throughout southwestern Kansas wheat stands were thinned and the early seeding destroyed. Replanting continued until the last of December. Incidentally we have received reports of injury at Spearman and Follett, Tex.

CORN

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

Rhode Island

A. E. Stene (February 24): The only insect that we have watched is the corn borer and that is apparently in condition to give us quite an infestation this year unless the growers clean up early in the spring.

GRAPE COLASPIS (Colaspis brunnea Fah.)

Illinois

J. H. Bigger (February 20): Little damage is expected during the coming season in the western part of the State. The clover acreage during 1928 was small and the majority of it fall plowed.

VETCH

APHIDIIDAE

Alabama

J. M. Robinson (February 18): During December, January, and early February the plant lice on vetch and Austrian peas have been active and have appeared in average numbers.

ALFALFA

PEA APHID (Illinoia pisi Kalt.)?

Arizona

O. L. Barnes (February 23): A few specimens of aphids were found on alfalfa on February 21, at Phoenix. These aphids were rather large, light green, and slender. I am of the opinion that the species is Illinoia pisi Kalt. They were hard to find in the fields examined.

F R U I T I N S E C T S

APPLE

APHIDAE

Pennsylvania

H. E. Hodgkiss (February 15): Aphid eggs are very abundant, not only on water sprouts but on fruit spurs, and there seems to be but a very small percentage of the eggs collapsed at the present time. We are expecting a renewal of the outbreak of three years ago, since this condition has not appeared at all on the trees since 1925.

West Virginia

W. E. Rumsey (February 26): Aphid eggs on apples are rather common about Morgantown.

CODLING MOTH (Carpocapsa pomonella L.)

Illinois

S. C. Chandler (March): On February 18, at Carbondale, in southern Illinois, 24 per cent of the codling moth larvae kept in corrugated strips in cages on the tree trunk were dead, possibly from low temperatures. The lowest temperatures at this point has been 2 degrees below zero.

California

Monthly News Letter, Los Angeles County Horticultural Commission, Volume 11, No. 2, February 15: Antelope Valley pear growers will attempt a night campaign against the ravages of the codling moth this spring by mounting high-powered lights on their spray rigs. Pear growers in the Valley have for several years been faced with the problem of covering a large acreage for codling moth control in a relatively short period. The period during which good control can be had with the calyx spray usually does not extend over ten days or two weeks and because there are not enough rigs in the Valley to thoroughly cover the orchards during this time there have been many instances of wormy fruit.

CANKER WORMS (Paleacrita vernata Peck and
Alsophila pometaria Harr.)

Kansas

R. L. Parker (February 14): We placed trap bands on the trees on January 12. This happened to be a day with temperatures

ranging in the 40's. That night our cold weather hit, and since that time there has been no emergence. On the day we banded the trees we collected one male fall canker worm, Alsophila pometaria Harr., and one male spring canker worm, Paleacrita vernata Peck.

EUROPEAN RED MITE (Paratetranychus pilosus Can. & Fanz.)

Pennsylvania H. E. Hodgkiss (February 15): We have noted an abundance of eggs of the European red spider throughout the entire eastern half of the State, and in occasional orchards scattered through most of the western counties. In other words, we expect to have a continuation of our severe red spider infestation the coming spring.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Pennsylvania H. E. Hodgkiss (February 15): The San Jose scale is comparatively unimportant except in occasional unsprayed orchards.

Illinois S. C. Chandler (March): This insect is reported to be quite scarce in the orchards in southern Illinois. In western Illinois the scale is moderately abundant in a few orchards, but is quite general in the orchards of the large apple-growing section in this part of the State. Counts made during the first part of February show from 30 to 35 per cent of the scale alive at that time. This is about the normal percentage for this time of the year.

Georgia Oliver I. Snapp (February 20): On account of financial conditions a number of peach orchards have not been sprayed this winter for the San Jose scale. As a result, we look for this insect to increase in Georgia, followed by the abandonment of some orchards on account of the pest.

Alabama J. M. Robinson (February 18): The crawlers of the scale insects have been active on fruit at Auburn.

PEAR

PEAR LEAF BLISTER MITE (Eriophyes pyri Pgst.)

California Monthly News letter, Los Angeles County Horticultural Commission, Volume 11, No. 2, February 15: William B. Parker reports in the December, 1928, issue of the Blue Anchor that he finds that there are two strains of the pear leaf blister mite attacking the pear trees in California.

Apparently there is no difference in their structure but their habits and the type of injury that they cause are quite different. Now will the usual control measures applied for the regular pear leaf blister mite, which consists of a spraying with lime and sulphur in the fall, be at all effective against the bud mite?

It is quite possible that Los Angeles County has an infestation

of the bud form of the mite in a few pear orchards in the Antelope Valley. Horticultural Inspector W. L. Worthy of Los Angeles County has reported a type of injury to pears in some of the orchards in the Antelope Valley district which he believes is a similar type to that reported by Mr. Parker. Heavy infestation of the bud form of mite causes a russetting and in some cases a stunting of the fruit, as well as the dropping of blossoms and young fruit and a dwarfing of both foliage and fruit.

Inspector Worthy recently selected specimens from pear orchards which have in the past shown a type of russetting and had determinations made through Mr. G. R. Gorton, Deputy Horticultural Commissioner of Los Angeles County. In each instance the specimen showed infestation of the pear leaf blister mite, and an attempt is being made by correlating the damage and infestations in the orchards to determine whether or not the mite is in the bud form found by Mr. Parker.

PEACH

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Georgia

O. I. Snapp (February 20): From present indications we can expect an early insect season in Georgia. Peach buds are bursting two to three weeks ahead of the normal date. The chances are that the curculio will begin to leave hibernation early in March, and if so, we can look for two generations in Georgia. The winter has been unusually mild, and in all probability the mortality of insects in hibernation has been lighter than usual to date.

FULLER'S ROSE BEETLE (Pantamorus fulleri Horn)

Georgia

M. S. Yeomans (February 12): The writer has also noticed in one particular peach orchard in the Fort Valley section a large number of Fuller's rose beetles. As high as 20 of these beetles were counted to a tree. They seem to be attracted to recently pruned trees.

TARNISHED PLANT BUG (Lygus pratensis L.)

Illinois

S. C. Chandler (March): Examinations made of hibernating tarnished plant bugs in mullein plants in southern Illinois show the bugs to be present in very small numbers, and peach catfacing is not expected to be severe.

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

Illinois

S. C. Chandler (March): On February 18, at Carbondale, in southern Illinois, 28 per cent of the oriental fruit moth larvae kept in corrugated strips in a cage entirely exposed to the weather were dead, possibly from low temperatures. The lowest temperature at this point has been 2 degrees below zero.

CHERRY

A SCALE INSECT (Possibly Aulacaspis pentagona Targ.)

Connecticut
and
New York

E. P. Felt (February 23): This scale insect is locally abundant and injurious at Greenwich, Conn., and in the Bronx, New York City, and has apparently maintained a somewhat injurious status in these localities for a series of years.

PECAN

PECAN COSSID (Cossula magnifica Strock.)

Mississippi

R. W. Harned (February 12): On January 16 a correspondent at Woodville sent to this office some larvae that proved to be those of the oak or hickory cossid. Regarding them the correspondent wrote as follows: "These borers were cut out of one live pecan tree from 1 inch to 12 inches from the ground. Tree about 12 years old. All trees found to be infested so far are live trees. We are locating them every day."

WHITE ANTS (Reticulitermes sp.)

Alabama

J. M. Robinson (February 18): We had a request on February 13, asking for methods for the control of white ants attacking and destroying pecan trees near Unions Springs, the trees having been protected by posts driven in the ground in previous years. This very likely is the source of trouble.

CITRUS

SCALE INSECTS (Coccidae)

Haiti

Roger C. Smith (February 22): In the last two weeks we have sprayed citrus trees for two species of scale insects. We do not permit the scale insects to become plentiful. They are constantly present and spraying every month or two appears to be necessary.

COTTONY-CUSHION SCALE (Icerya purchasi Mask.)

Louisiana

W. E. Hinds (February 23): The cottony-cushion scale was found present in the orchard at Baton Rouge, with specimens of *Vedalia* beetles also present in the same tree.

PURPLE SCALE (Lepidosaphes beckii Newm.)

Louisiana

W. E. Hinds (February 23): An examination of citrus orchards in Plaquemines Parish, about 70 miles south of New Orleans, during the latter part of January indicated the presence of the purple scale quite commonly but the species is being held

partially in check by the abundant occurrence of red-headed fungus which commonly attacks this scale.

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Louisiana

W. E. Hinds (February 23): The citrus whitefly was surprisingly scarce and the trees were quite free from sooty mold.

APHIDIIDAE

Haiti

Roger C. Smith (February 22): In the last two weeks we have sprayed citrus trees for aphids which have been sufficiently abundant to cause large numbers of the younger leaves to be badly curled.

COFFEE

COFFEE BERRY BEETLE (Stephanoderes sp.?)

Haiti

Roger C. Smith (February 22): However, more important perhaps is a very small beetle which attacks coffee berries while still on the bushes; we fear it is Stephanoderes. These small beetles bore into the beans and seriously damage them. Not so much coffee damaged as these beetles usually attack has been found, but the beetle probably is capable of becoming a severe pest. Several other small beetles have been taken in coffee, but I believe they are scavengers or in some cases are attracted to moldy coffee.

COFFEE TREE CRICKET (Probably new species)

Haiti

Roger C. Smith: The coffee cricket is probably the most important coffee insect in Haiti (Fond des Negres) but actually it is of little consequence. The eggs are laid in May in tree cricket fashion in the young stems. They hatch from December on. Some of the eggs have hatched now (December 10), while many show advanced embryological development. Small brown and black ants enter the punctures and destroy about one-third of the eggs.

CASSAVA

MANIOC FLY (Lonchaea chalybea Wied.)

Haiti

Roger C. Smith (January 28): A generation of these flies has just been completed and the manioc (Morinda sp.) on the experimental farm at Damien has been seriously damaged. The larvae bore into the young growing tips and kill them. The buds in the axil of the next leaf below begins to grow. Plants were seen today where twigs were thus injured twice.

TRUCK CROP INSECTS

VEGETABLE WEEVIL (Listroderes obliquus Gyll.)

Mississippi M. M. High (January 30): The vegetable weevil has been found in 7 new counties in this state and are as follows: Holmes, Attala, Carroll, Lowndes, Noxubee, Kemper, and Monroe. I would not be suprised to find the vegetable weevil further north than Monroe County, which is only 3 counties south of the Tennessee state line. The weevil is very abundant in Lowndes County just now and quite numerous in several of these other northern counties so to speak.

R. W. Harned (February 12): Several complaints have been received recently regarding injury to turnips, mustard, rape, collards, and cabbage by the vegetable weevil. Specimens were received on January 24 from Bogue Chitto, and on February 2, from Hattiesburg. The correspondent from Hattiesburg wrote as follows: "Since they have about destroyed the mustard, turnips, and rape, they have gone to the collards."

Alabama
and
Florida

M. M. High (February 26): The vegetable weevil was recently found in 5 more counties in Alabama and 1 additional county in Florida. In some instances the injury was severe, while in others it was only slight as yet. In Alabama the known new counties are as follows: Coffee, Dallas, Crenshaw, Geneva, and Wilcox, and in Florida, Holmes.

A WEEVIL (Listroderes apicalis Waterh.)

Mississippi

M. M. High (January 26): A single specimen of this half-brother of the vegetable weevil was found on January 19, at Grenada, by Mr. J. L. Tate.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Alabama

J. M. Robinson (February 18): The twelve-spotted cucumber beetle has been feeding on these winter legumes (vetch and Austrian peas) and depositing eggs. A small propoertion of the beetles have been parasitized by one of the Diptera.

Mississippi

M. M. High (January 26): The spotted cucumber beetle is now quite abundant on most truck crops along the Mississippi Coast, particularly turnip, mustard, lettuce, spinach, cabbage, etc.

Louisiana

W. E. Hinds (February 23): Adults of the 12-spotted cucumber beetles are very abundant and damaging the foliage of a number of winter-growing truck crops. These insects are active upon warm days throughout the winter in this section (Baton Rouge).

BANDED CUCUMBER BEETLE (Diabrotica balteata Lec.)

- Alabama J. M. Robinson (February 18): Diabrotica balteata Lec. has been active on warm days, especially on spinach and other garden vegetables.
- Arizona A. C. Davis (January 14): This insect was collected by Mr. Warwick Benedict and myself at Yuma, on April 3, 1924, attacking alfalfa.
- California A. C. Davis (January 14): This insect was collected by Mr. Warwick Benedict and myself at Calipatria, on April 4, 1924, from alfalfa.
- I took it again on peppers (Capsicum annum) in the Mission Valley, San Diego, on September 22, 1927. There was no apparent damage being done, although the beetles were quite numerous. Specimens were sent to the U. S. Bureau of Entomology for identification. In a letter dated April 18, 1928, Mr. W. H. White, Associate Entomologist, says in part: "There is one very interesting occurrence, that of Diabrotica balteata Lec. collected at San Diego, Calif. I have been through some of the literature and have not been able to find this insect as recorded any farther west than Arizona."

LEAFHOPPERS (Cicadellidae)

- Arizona O. L. Barnes (February 23): Several species of Cicadellidae were observed to be feeding on various garden plants on February 21, although individuals were not numerous.

MARCH FLIES (Bibionidae)

- North Carolina J. N. Tenhet (February 11): Feeding under fallen pine needles. Present in immense numbers in one patch of woods at Chadbourn. Pine straw was being gathered to use as mulch for strawberries. Larvae of this group of march flies have been reported as destructive to potatoes in Ireland.

A MOLE CRICKET (Scapteriscus acletus R. & H.)

- Mississippi M. M. High (February 26): This species of mole cricket is again showing up in injurious numbers about Landon, Lyman, and Handsboro attacking cabbage, lettuce, and other vegetables.

TOMATOES

LEAF SKELETONIZERS (Lepidopterous larvae)

- Haiti R. C. Smith (February 22): There are two leaf skeletonizers on tomatoes very abundant now. Both of these also attack tobacco. They attack the younger growth and therefore often kill the young plants. I noticed yesterday that about 50 of our plants had been killed by one species.

TURNIP

TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

South Carolina M. H. Brunson (February 14): Aphis brassicae has been destructive on turnips and is fairly general over the State.

Alabama J. M. Robinson (February 18): The turnip louse is quite abundant in turnip crowns at the present time.

Mississippi M. M. High (January 26): The turnip aphid is doing serious damage to turnip, mustard, cabbage, and like crops through the State at this time. (February 26): The turnip aphid has been very abundant on turnip, radish, and mustard the past several weeks, but some growers have kept the injury down by dusting with nicotine dust on warm days. The pest does more or less injury in this State every month of the year.

R. W. Harned (February 12): Rhopalosiphum pseudobrassicae Davis on collard from Hattiesburg February 1.

Louisiana W. E. Hinds (February 23): The turnip plant louse is extremely abundant and destroying stands of radishes, turnips, etc., in many localities in this State. Complaints are particularly strong from trucking areas in the vicinity of New Orleans.

Texas F. L. Thomas (February 20): Turnip lice (Aphis pseudobrassicae Davis) were becoming abundant on turnips just before the recent cold spell occurred, February 8 - 10.

PENTATOMIDS

Alabama J. M. Robinson (February 18): Certain pentatomids have been causing damage in the extreme southern part of the State to turnips.

STRIPED FLEA BEETLE (Phyllotreta vittata Fab.)

Mississippi M. M. High (January 26): The striped turnips flea beetle (Phyllotreta vittata Fab.) is very plentiful this season at Gulfport and was observed to destroy several early plantings of turnips just after the plants had come up and before these attained a height of 3 to 4 inches.

CABBAGE

CABBAGE WEBWORM (Hellula undalis Fab.)

Mississippi M. M. High (January 26): The imported cabbage webworm (Hellula undalis Fab.) until the recent cool weather was doing serious injury to cruciferous crops over the State.

CABBAGE LOOPER (Autographa brassicae Riley)

Mississippi M. M. High (January 26): The cabbage looper has been unusually abundant the past few months on cabbage, collard, cauliflower, etc.

A CABBAGE LOOPER (Noctuidae)

Haiti R. C. Smith (February 22): Cabbages are being severely attacked by the southern cabbage looper.

A CABBAGE STEM BORER

Haiti R. C. Smith (February 22): We also have serious damage by a cabbage stem borer, two adults of which were sent to Washington today. It attacks turnips, radishes, and mustard in addition.

A SKELETONIZER (Lepidoptera)

Haiti R. C. Smith (February 22): There is also a skeletonizer on cabbage which was serious two weeks ago, but the local cabbage is beyond damage by it now.

CABBAGE APHID (Brevicoryne brassicae L.)

Mississippi R. W. Harned (January 4): On cabbage from McNeill. Determination made by A. L. Hamner.

Arizona O. L. Barnes (February 23): Aphids, which from descriptions and appearance I believe to be Brevicoryne brassicae L., were very abundant on cabbage and cauliflower plants in the Salt River Valley, 5 to 10 miles west of Phoenix. The aphids were present in all stages from very young nymphs to adults, and many leaves were almost entirely covered by the insects.

HARLEQUIN BUG (Murgantia histrionica Hahn)

Alabama J. M. Robinson (February 18): The harlequin cabbage bug is appearing in the southern portion of the State in about the usual numbers.

Mississippi M. M. High (January 26): The harlequin cabbage bug did considerable injury to turnip, cabbage, collard, etc., during December in central Mississippi and along the coast.

STRAWBERRY

A WIREWORM (Monocrepidius bellus Say)

North Carolina J. M. Tenhet (February 13): Present in considerable numbers under dead and dying strawberry plants in field about to grow up in weeds at Chadbourn.

BEANS

BEAN WEEVILS (*Mylabridae*)

Haiti

R. C. Smith (February 22): Representatives of several species of bruchids which are by far the most important insects of red beans here (Haiti) were also sent to Washington for determination. They have lately been found to be abundant.

MELONS

MELON WORM (*Diaphania hyalinata* L.)

Haiti

R. C. Smith (January 28): Another generation of this pumpkin leaf worm has just been completed at Damien. This injury was less serious than during the previous generation of the insect. (February 22): The pumpkin leaf worm is in between generations now, a large one having been completed in January.

SWISS CHARD

GREENHOUSE LEAF TYER (*Phlyctaenia ferrugalis* Hbn.)

Mississippi

M. M. High (January 26): The celery leaf tyer (*Phlyctaenia ferrugalis* Hbn.) destroyed a planting of Swiss chard near Landon, and slight injury was done to cabbage and turnip crops in the vicinity.

CARROTS

FLEA BEETLES (*Halticinae*)

Arizona

O. L. Barnes (February 23): One flea beetle, species not determined, was seen on carrots in the Salt River Valley, 5 to 10 miles west of Phoenix.

LETTUCE

APHIDIIDAE

Arizona

O. L. Barnes (February 23): Several commercial lettuce fields were examined for insect pests February 21. Aphids, species not determined, were the only insects found, and they were not abundant. Only a few of the small, dark-green individuals were found on any one plant.

ONIONS

ONION THRIPS (*Thrips tabaci* L.)

Arizona

O. L. Barnes (February 23): Nymphs of what I believe to be

Thrips tabaci L. were plentiful on onion plants in the Salt River Valley, 5 to 10 miles west of Phoenix, but damage was not noticeable.

PEPPER

PEPPER WEEVIL (Anthonomus eugenii Cano)

California

Monthly News Letter, Los Angeles County Horticultural Commission, Volume 11, No. 2, February 15: A recently completed survey of pepper fields in Los Angeles County, conducted by the Los Angeles County Horticultural Commissioner's Office, has shown practically all of the old plants to have been plowed under as a pepper weevil control measure. This procedure is in accordance with recommendations of Federal Entomologists.

S O U T H E R N F I E L D - C R O P I N S E C T S

COTTON

BOLL WEEVIL (Anthonomus grandis Boh.)

Louisiana

W. E. Hinds (February 23): Boll weevils have begun emerging from our hibernation cages at Baton Rouge. The first of these weevils were found active on the screens on February 11. Of course, no cotton is planted yet in the State and such early emerging weevils must either rehibernate or die within a few weeks.

A CERAMBYCID BEETLE (Ataxia crypta Say)

Texas

F. L. Thomas (February 20): We have had many complaints in the late fall and during the winter of cotton stalk borers (Ataxia crypta) in cotton that had been killed or injured by root rot.

PINK BOLL WORM (Pectinophora gossypiella Saund.)

Haiti

R. C. Smith (February 22): The pink boll worm has been found, by actual counts of large numbers of bolls from several varieties of cotton, to be especially scarce this year. The actual infestation will be less than 1 per cent. We do not have sufficient material to carry on our work.

COTTON LEAF WORM (Alabama argillacea Hbn.)

Haiti

R. C. Smith (February 22): The cotton leaf worm is in the dormant stage now, but the generations are proceeding nicely in our cages. We have half-grown larvae of the eighth generation

since last August in our cages now. Most cotton has been picked once and some cotton several times, but even on the bushes with green leaves along irrigation ditches there are no leaf worms.

COTTON STAINER (Dysdercus suturellus H. Sch.)

Haiti

R. C. Smith (January 8): The cotton stainer began to cluster on the bolls about the middle of December at Port-au-Prince. They have been so abundant during the last two weeks that control efforts have been necessary. The bugs are picked or jarred into pans of kerosene. The very large numbers of nymphs attacking fallen bolls have been readily controlled with cyanogas. Considerable stained cotton occurs in early pickings.

(February 22): There are, however, large numbers of cotton stainers feeding primarily on the young bolls. This is the second generation of adults since last December and there are a good many third-generation nymphs in evidence.

SOUTHERN GREEN STINK BUG (Nezara viridula L.)

Haiti

R. C. Smith (January 9): A common pest in Haiti and attacking many plants. It was particularly abundant on cotton on the young bolls a few weeks ago at Damien and it is thought that their attack is a common cause of the dropping of bolls in the early stage of growth. Peas and tomatoes are also being attacked by this insect.

RED SPIDER (Tetranychus telarius L.)

Haiti

R. C. Smith (January 8): Many plants are severely attacked by these mites at Port-au-Prince. A study is being made to find whether their distribution is correlated with the presence or absence of leaf pubescence. (February 22): The cotton leaf mite is now very abundant indeed in our experimental cotton. This is young cotton and not yet producing bolls.

TOBACCO

HORN WORMS (Protoparce spp.)

Haiti

R. C. Smith (January 9): These worms have killed some plants and more or less completely defoliated others on the horticultural farm at Damien. They appear to be at their peak also on tobacco. A plantation at La Serre reported them to have been more troublesome lately. Tomatoes are also being attacked by these worms. (February 22): The horn worms are giving considerable trouble to tobacco, judged by the number of calls for lead arsenate.

TOBACCO LEAF SKELETONIZER (Species not determined)

Haiti R. C. Smith (February 22): There are several tobacco leaf skeletonizers which I have somewhat confused in my mind in spite of the fact that all have been determined. In our own tobacco bed here (Port-au-Prince) from which we are about to make a planting, we are having exceedingly serious damage by two of them.

SUGARCANE

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana W. E. Hinds (February 23): The sugarcane borer population in hibernation is usually small and there appears to be the prospect for an exceptionally light first generation of borers in Louisiana cane and corn this spring.

I N S E C T S A T T A C K I N G G R E E N H O U S E A N D
O R N A M E N T A L P L A N T S

BLACK VINE WEEVIL (Brachyrhinus sulcatus Fab.)

Washington C. F. Doucette (February 5): This weevil was very prevalent in an outside planting of Astilbe sp. (the greenhouse spiraea, as usually termed in the florists' trade) near Tacoma. Damage by the larvae of this weevil to cuttings of Taxus (yew) in a nursery propagating bed near Mt. Vernon was reported in December. Larvae of this weevil, or a closely related species, were causing considerable damage to young sweet pea plants in a greenhouse at Sumner, during January. The larvae would kill the plants by eating all the roots and the seed peas. One cyclamen grower at Kent stated that he had lost over 1,000 plants during the fall months of 1928 from the attacks of the larvae of this weevil.

JAPANESE SPOTTED CAMEL CRICKET (Diestrammena japonica Blath.)

Ohio E. W. Mendenhall (February 7): This insect was found doing considerable damage to greenhouse plants, especially the succulent growth of the plants at Gahanna (Franklin County).

CHRYSANTHEMUM

CHRYSANTHEMUM GALL MIDGE (Diarthronomyia hypogaea Loew)

Ohio E. W. Mendenhall (February 7): The chrysanthemum midge is held in check in most of the greenhouses in Springfield. Nicotine sprays and fumes seem to be more successful in combating the pests than anything found up to date.

Washington
and
Oregon

C. F. Doucette (February 5): This insect has been very prevalent and caused injury to most of the chrysanthemum plantings in western Washington and Oregon during the past season. It has apparently been generally distributed among the greenhouse establishments because of the prevalent practice of swapping stock plants and cuttings, and the absence of serious attempts to control the infestation.

EUONYMUS

EUONYMUS SCALE (Chionaspis euonymi Comst.)

Connecticut

E. P. Felt (February 23): This insect is locally abundant and appears to have wintered in large numbers at Stamford.

GLADIOLUS

APHIS Sp.

Iowa

C. N. Ainslie (February 14): Stored bulbs are attacked by numerous individuals of Aphis sp. at Sioux City. They obtain sufficient food to multiply on the bulbs and do noticeable injury to the growing tips.

LILY

BULB MITE (Rhizoglyphus hyacinthi Boisd.)

Ohio

E. W. Mendenhall (February 12): This is on Easter lily, imported from Japan, and is found badly infesting the lily bulbs in one of the greenhouses in Dayton. In this shipment there were 5,500 bulbs and a large percentage of the plants are destroyed by the mites.

PALM

PALM LEAF SKELETONIZER (Homaledra sabalella Chambers)

Haiti

R. C. Smith (January 3): This insect was not known before to occur in Haiti. Some Latanier palms on an estate near the city (Port-au-Prince) were badly damaged in November by these larvae. The next generation is now on the trees but the numbers are reduced.

PHLOX AND CYCLAMEN

GREEN PEACH APHID (Myzus persicae Sulz.)

Mississippi

R. W. Harned (February 22): This insect was reported on phlox from Mineral Wells, on January 29, and on turnip from Hattiesburg, February 1. Determination made by A. L. Hamner.

Illinois

C. C. Compton (December 20, 1928): This aphid was causing severe injury to cyclamen at Des Plaines before it was discovered by the grower. Feeding almost entirely on buds and opening blooms. A single aphid on a bud sufficient to cause deformed bloom.

PITTISPORUM

COTTONY CUSHION SCALE (Icerya purchasi Mask.)

South Carolina

M. H. Brunson. (February 14): This insect has killed several pittisporum plants of this location (Columbia). Has damaged plants in two consecutive years. Is not a common scale in South Carolina.

FOREST AND SHADE-TREE INSECTS

CAMPHOR

CAMPHOR SCALE (Pseudaonidea duplex Ckll.)

Louisiana

W. E. Hinds (February 23): Complaints of camphor scale affecting camphors, japonicas, etc., have been received from several parties in the vicinity of Crowley. The infestation is extremely heavy judging from some of the samples received.

LARCH

LARCH CASE BEARER (Coleophora laricella Hbn.)

Connecticut
and
New York

E. P. Felt (February 23): This insect is very abundant upon some trees at Greenwich, Conn., and has been reported as generally present and numerous in the Poughkeepsie, N. Y., area.

MAPLE

JAPANESE MAPLE SCALE (Leucaspis japonica Ckll.)

Connecticut
and
Rhode Island

E. P. Felt (February 23): The Japanese maple scale is becoming locally abundant and injurious upon Norway and soft maples at Greenwich, Conn., and has become established at Westbury, R.I.

COTTONY MAPLE SCALE (Pulvinaria vitis L.)

Connecticut

E. P. Felt (February 23): The cottony maple scale is locally abundant upon soft maples, many of the inconspicuous young being apparently in excellent condition at the present time.

SPRUCE

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

Nebraska

L. M. Gates (January 22): There was an extraordinary increase

of this insect during August, 1928, in the eastern part of Nebraska. Many trees which showed little or no infestation in July are now heavily infested. Spruce is most seriously affected but pines are also severely attacked.

TULIP

TULIP TREE SCALE (Toumeyella liriodendri Gmel.)

Connecticut

E. P. Felt (February 23): The tulip tree scale is locally abundant, trees injured last year being infested at the present time with large numbers of partly grown young.

INSECTS ATTACKING MAN AND DOMESTIC ANIMALS

MAN

FLEAS (Siphonaptera)

Georgia

O. I. Snapp (January 24): Fleas are unusually abundant this year. A very heavy infestation occurred on a farm near Marshallville, where a 200' x 75' mule barn and other outbuildings were infested. They were also under residences. Mules, laborers, and families were greatly annoyed.

POULTRY

BED BUG (Cimex lectularius L.)

Iowa

Carl J. Drake (February 14): The common bedbug has been found in a large number of chicken coops in Iowa during the past year and seems to be a rather common pest on chickens in the State.

STICKTIGHT FLEA (Echidnophaga gallinacea Westw.)

Kansas

J. W. McColloch (January 22): A bad infestation of this flea is reported in a poultry flock at Hudson.

HOUSEHOLD AND STORED PRODUCT

INSECTS

TERMITES

Kansas

J. W. McColloch (February 19): Reports of damage by termites (Reticulitermes sp.) have continued to come in during the

winter. Woodwork in dwellings has been injured at Eureka, Wichita, Kansas City, and Hunnewell. The woodwork in a hotel at Manhattan was undermined, necessitating replacement in several rooms. Cherry trees are being killed by termites at Almena.

Texas

F. L. Thomas (February 20): Termites reported as injuring the sill of a dwelling in Houston.

Haiti

Roger C. Smith (January 19): Termites (Cryptotermes brevis Walk., Nasutitermes morio Latreille, and others) are a tremendously difficult factor to handle in buildings in Haiti (Port-au-Prince). The porch pillars of one of the main buildings of the Haitian General Hospital are being replaced with cement ones. The wood pillars have been badly damaged. Covered tunnels from ceiling to floor have been built during the last few weeks in the main building at Damien.

POWDER POST BEETLES (Lyctus sp.)

Alabama

J. M. Robinson (February 18): From Cullman we have had a request for information on how to reduce the damage to flooring and finishings in homes from powder-post beetles.

EUROPEAN EARWIG (Forficula auricularia L.)

Idaho

C. Wakeland (January 22): The specimen of European earwig collected at Parman was determined by us by comparison with specimens obtained from Portland.

S T O R E D - G R A I N I N S E C T S

Kansas

J. W. McColloch (February 19): Stored-grain insects have caused much damage to wheat and are still abundant in bins and granaries. Much wheat has been forced on the market by infestation of weevils. Undoubtedly heavy losses will occur this spring. Reports have been received from the following counties; Smith, Russell, Republic, Mitchell, Cloud, Washington, Marion, Greenwood, Elk, and Johnson.

Nebraska

M. H. Swenk (November 1-January 1): Reports of stored-grain pests working in the new wheat continued to be received until about the middle of November, when these complaints ceased. The species concerned were Plodia interpunctella Hbn. and Tenebroides mauritanicus L.

RICE WEEVIL (Calendra oryzae L.)

Alabama

J. M. Robinson (February 18): The corn weevil has been quite active and has done its share of damage in southern and central

portions of the State. .

COFFEE

A DERMESTID

Haiti

R. C. Smith (February 22): It was commonly stated in Haiti that coffee was not attacked by any serious insect but, largely through the activity of the market specialist, we have discovered several important insect pests. One of them is a dermestid which I judge to be a species of *Lasioderma*. It was taken at Jacmel eating holes into the coffee beans in storage. Beans thus injured have been collected in many places over the southern part of Haiti, so it seems probable that this is widely distributed and that a pest of the first magnitude has been discovered.

A WEEVIL (possibly *Mylabridae*)

Haiti

R. C. Smith (January 6): This is the first instance known to the staff of damage to hulled coffee beans in Haiti. A small sample about 2 years old was found at Jeremie to be completely riddled. A black bean in the lot showed typical bruchid injury.

COFFEE BEAN WEEVIL (*Araecerus fasciculatus* DeG.)

California

Roy E. Campbell (December 27, 1928): 50 bags of green coffee beans arrived here (Los Angeles) in May, 1928, from Columbia, infested, but several hundred bags in the same warehouse from different countries were apparently uninfested. (Determination by Dr. E. A. Back.)

RAW SILK

A DERMESTID (*Dermestes cadaverinus* Fab.)

Illinois

C. C. Compton (February 16): Observed feeding on strands of raw tussah silk in Chicago factory. Also reported from Kinkaid.

CARPET BEETLE (*Anthrenus scrophulariae* L.)

Illinois

C. C. Compton (February 23): Severe injury to silk thread by larvae of carpet beetle reported from Chicago. Larvae bore into side or corner of spool of silk, severing the threads by cutting a clean round hole. Spools of large manufacturing size.

THE INSECT PEST SURVEY
BULLETIN

A periodical review of entomological conditions throughout the United States
issued on the first of each month from March to December, inclusive.

Volume 9

April 1, 1929

Number 2

BUREAU OF ENTOMOLOGY
UNITED STATES
DEPARTMENT OF AGRICULTURE
AND
THE STATE ENTOMOLOGICAL
AGENCIES COOPERATING

INSECT PEST SURVEY BULLETIN

Vol. 9

April 1, 1929

No. 2

OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR MARCH, 1929

In this number of the bulletin is a general review of the Hessian-fly situation as it appeared to the investigators of the Bureau of Entomology and the State collaborators during the fall and winter months. In general, throughout the Middle Atlantic States and the northern part of the East Central States the Hessian fly was not unusually abundant. In the southern part of the East Central States extending southward over western Kentucky and Tennessee this insect was more plentiful. The situation west of the Mississippi Valley is greatly improved over that of last year with the exception of central and southeastern Kansas and southwestern, east central, and northeastern Missouri.

Up to the present time there are no indications from any part of the country that the chinch bug is abnormally abundant.

Reports from Connecticut indicate that the apple aphid (Aphis pomi DeG.) is likely to be unusually abundant in that State. Similar conditions occur in parts of Missouri.

The California red scale has been found heavily infesting willow and nightshade in ravines adjacent to citrus groves in California. These infestations are undoubtedly responsible for the difficulty in cleaning up infestations adjoining these ravines.

Recent recoveries of Coccophagus sp. indicate that this parasite of the citrophilus mealybug is able to maintain itself under the winter conditions of southern California.

A tortricid moth (Amorbia sp.), probably a new species, has recently been reared from material from La Habra Heights, Calif. This insect seriously disfigures the fruit of avocado by its galleries.

The vegetable weevil is reported as causing very serious damage from many parts of Mississippi.

The onion thrips is seriously affecting several hundred acres of onions in the Laredo district of Texas. It appears that in this district broccoli acts as an alternate host plant for this thrips.

In the Chadbourn district of North Carolina, slugs are reported as doing considerable damage to tobacco in seed beds. This condition has not been observed heretofore.

A new host, Thea sinensis, for the citrus whitefly is reported by the Los Angeles County Horticultural Commission.

In this number of the bulletin is a series of records made on the abundance of the common cattle grub throughout the Middle Atlantic, East Central, and Mississippi Valley States, and westward to Oklahoma and Texas.

GENERAL FEEDERS

WIREWORMS (Elateridae)

Missouri

L. Haseman (March 25): From limited observations, wireworms in sod land seem less abundant at this time than usual. A few of the adult beetles have recently been observed moving about above ground.

WHITE GRUBS(Phyllophaga spp.)

Missouri

L. Haseman (March 25): As yet no emergence and no flight of the beetles have occurred but they are present in goodly numbers in the sod land just beneath the surface of the soil. The larvae are also present in the surface soil as shown by recent diggings.

CEREAL AND FORAGE-CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

General
Statement

C. C. Hill (January, 1929): In general, throughout the States of Pennsylvania, Maryland, Delaware, the panhandle district of West Virginia, Virginia, and North Carolina the Hessian-fly infestation was considerably less than in 1927, and with the exception of certain districts of Pennsylvania is not sufficient to cause serious alarm to wheat growers. From previous experiences however, sufficient fly is present throughout most of the area under observation to merit observance of recommended dates of sowing to avoid fly injury. The most heavy infestations were found in the central wheat-growing districts of Pennsylvania and here damage to the coming crop will be unavoidable.

C. M. Packard (January, 1929): In southern Michigan, and in the northern and central portions of Ohio and Indiana the Hessian fly was not sufficiently abundant in the fall-sown wheat to cause injury, though it was universally present. Occasional early-sown fields containing considerable infestation were noted in Branch and Calhoun Counties in southern Michigan, in Fulton County in northwestern Ohio, and in several counties of northeastern Ohio, but on the whole infestation was very light. In the southern portions of Ohio, Indiana, and Illinois, however, the Hessian fly was more abundant last fall, many of the earlier sown fields being very heavily infested. Rather high infestations occurred also in some localities of western Kentucky and western Tennessee.

J. R. Horton (November, 1928): In general the Hessian-fly situation west of the Mississippi River has greatly improved since last summer, although there are sections in which a dangerously high percentage of the wheat is infested. The fly has decreased in the western two-thirds and the northern third of Kansas, but

had increased slightly in the central and southeastern portions. It is on the increase in almost all parts of Missouri, with the exception of the central western portions; and dangerous infestations occur in the east, central, and southwestern portions. In Oklahoma the fly is not abundant and high infestations occur only in the northeastern portion of the State. In Nebraska there is some infestation in southeastern counties, but on the whole nothing to cause alarm. Should weather conditions be favorable to the fly next spring (1929) serious outbreaks are in prospect in some localities in southeastern Kansas, and northeastern Oklahoma, and southwestern and east-central Missouri.

Missouri

L. Haseman (March 25): As reported last year, there is evidence that the Hessian fly in Missouri is on the increase and where wheat was seeded early last fall some fields were seriously damaged and we are expecting trouble from the Hessian fly this year; in east-central and northeastern Missouri the fly is serious.

CHINCH BUG (Blissus leucopterus Say)

Missouri

L. Haseman (March 25): There is nothing to report on the chinch bug, but judging by its scarcity throughout the State last fall we are not expecting it to be serious this year.

GREEN BUG (Toxoptera graminum Rond.)

Georgia

M. G. Yeomans (March 7): This insect has been found in the following counties: Irwin, Tift, Charlton, Brooks, Wilcox, Richmond, and Johnson, on oats and wheat.

F R U I T I N S E C T S

APPLE

APPLE APHID (Aphis pomi DeG.)

Connecticut

Philip Garman (March 25): Aphid eggs are unusually abundant in many orchards in New Haven County. Those hatched so far appear to be Aphis pomi DeG. Eggs are more abundant than last year.

Missouri

K. C. Sullivan (March 25): In some districts large numbers of eggs are present on apple trees. First hatching observed on March 24 and 25. There is a possibility of some serious injury this spring.

CODLING MOTH (Carpocapsa pomonella L.)

Missouri

L. Haseman (March 25): With the favorable control achieved last year in the northern half of the State we are not expecting an unusually serious infestation this year. However, in the

Ozark district of the State the codling-moth situation continues serious following unsatisfactory control last year. There is comparatively little winter mortality, as shown by recent collections of overwintering worms.

EUROPEAN RED MITE (Paratetranychus pilosus Can. & Fanz.)

Connecticut

Philip Garman (March 25): This mite is attacking apple in New Haven County, in the usual abundance. It is present in the egg stage in many orchards.

PEACH

PEACH BORER (Aegeria exitiosa Say)

Ohio

E. W. Mendenhall (March 25): At Dayton the peach trees for home planting to a large extent are affected with the peach borer. Many times through carelessness or ignorance. Only a few trees there could be easily taken care of.

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

Mississippi

R. W. Harned (February 28): Peach twigs showing injury that was probably caused by the oriental fruit moth were received on February 15 from Water Valley. The correspondent stated that his peach trees were seriously affected in this manner.

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Georgia

O. I. Snapp (March 21): Adults were found on the trees today at Fort Valley. This does not represent the date of the appearance of the first beetles from hibernation. They probably started to leave hibernation about two weeks ago. We are expecting a heavy infestation on peach on account of the heavy population entering hibernation and the mild winter.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Georgia

O. I. Snapp (March 7): Adults were first observed in the orchards today at Fort Valley. These insects begin to leave hibernation quarters at the same time as the plum curculio. The season is about two weeks earlier than 1929. (March 12): The infestation is heavy in some orchards and they are now damaging the peach blossoms (petals, calyces, and little peaches).

SAN JOSE SCALE (Aspidiotus perniciosus Say)

Georgia

O. I. Snapp (March 20): The San Jose scale infestation is not so heavy in the middle Georgia peach belt as usual.

Missouri

L. Haseman (March 25): The scale situation in Missouri is very favorable with no commercial orchard to my knowledge seriously infested.

PERSIMMON

PERSIMMON ROOT BORER (Sannina uroceriformis Walk.)

Mississippi

R. W. Harned (March 27): Borers that have been tentatively identified as Sannina uroceriformis were found boring into native persimmon at Biloxi on March 19.

PECAN

PECAN WEEVIL (Balaninus caryae Horn)

Mississippi

R. W. Harned (February 28): Ten out of 15 pecans received from a correspondent at Meridian on February 25 showed exit holes of the pecan weevil.

HICKORY SHUCK WORM (Laspeyresia caryana Fitch)

Mississippi

R. W. Harned (February 28): Twelve out of 15 pecans received from a correspondent at Meridian on February 25 showed injury by the pecan shuck worm.

AN APHID (Monellia sp.)

Georgia

T. L. Bissell (March 25): The first stem mother was found on March 25. Eggs were hatching in abundance March 26 at Experiment on pecan.

S U B T R O P I C A L F R U I T S

CITRUS

CALIFORNIA RED SCALE (Chrysomphalus aurantii Mask.)

California

Monthly News Letter, Los Angeles County Horticultural Commission Vol. 11, No. 3, March 15: For the past several years citrus growers in the foothills region of the Mission District near San Fernando have had difficulty in cleaning up red-scale infestations in the parts of their groves adjoining the ravines. Recently red scale (Chrysomphalus aurantii) has been found heavily infesting willows and nightshade in the ravines, providing a means for reinfesting the citrus trees. Heretofore the willows have not been thought of as hosts of this scale.

H. C. Whitmore, County Horticultural Inspector, states that between 7 and 10 miles of willows fill the two main ravines and their several tributaries in the citrus area. There are approximately 300 acres affected which are almost entirely lemon with only about 20 acres of oranges in close proximity to the willows.

CITROPHILUS MEALYBUG (Pseudococcus gahani Green)

California

Monthly News Letter, Los Angeles County Horticultural Commission, Volume 11, No. 3, March 15: At the present writing, the mealybug is completing the spring generation. Adult mealybugs and egg masses are found in the fruit clusters with very few migrating to the trap bands on the trunks of the trees. It is the progeny of this generation which make up the peak spring infestation which would normally occur during late April, May, or June.

The Los Angeles County insectary has made preparation to have available during that period, starting April 1, a sufficient number of *Cryptolaemus* to establish in all infestations of any consequence.

As far as seasonal conditions are concerned there is no evidence that infestations will be particularly severe this year. However, there is sufficient mealybug present in the infested areas to permit, under particularly favorable conditions, an increase to a serious degree of infestation if not carefully watched.

One of the more important of the new *Citrophilus* mealybug parasites introduced into this country by Prof. Harry S. Smith has evidenced the ability to work under our winter temperatures. Mealybugs infesting trees on which this particular parasite, Coccophagus sp., ~~has~~ been liberated, have recently been collected from several localities and forwarded to Prof. Smith for dissection to determine the percentage of parasitism. Mealybugs from North Whittier Heights showed on examination 15 per cent parasitism, from East Whittier 41 per cent and from Santa Monica 50 per cent. These percentages are particularly interesting for the reason that the liberations were made in number and made late in the fall, proving that the parasite is capable of reproducing effectively during the winter months, in fact, dissections indicated that some of the eggs had been deposited in the mealybugs during the recent period of below freezing temperatures. H. M. Armitage states the status of the parasite as a whole had not, however, reached a point where it is possible to draw any conclusions as to its effectiveness. However, it can be said at this time that it cannot help but be an aid to the control of this serious pest of citrus trees, inasmuch as we have not previously had any internal parasite of this species occurring in California.

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Texas

T. C. Barber (March 20): I saw a considerable number of adults of the citrus whitefly on the first shoots of orange trees at Brownsville, no material damage done however. These are the first I have observed this year.

AVOCADO

A TORTRICID MOTH (Amorbia sp.)

California

Monthly News Letter, Los Angeles County Horticultural Commission,

Volume 11, No. 3, March 15: A tortricid moth was recently reared by Mr. L. E. Myers of the Los Angeles County Horticultural Commissioner's Office, from a larva found attacking avocado at La Habra Heights. The work of the larva consisted of making a large and unsightly burrow in the rind of the fruit. This is not the first record of its occurrence in California, as according to Mr. Busck it was first reported by Prof. E. O. Essig in 1922 on the same host and recently from San Diego also on avocado. In the latter place it seems to be more troublesome in attacking the leaves rather than the fruit. It has been suggested by Mr. Kiefer of the State Department of Agriculture that the species is native and possibly of more common occurrence in Mexico than in California.

TEA

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Georgia
and
California

Monthly News Letter, Los Angeles County Horticultural Commission
Volume 11, No. 3, March 15: Inspector Douglas, recently found living whitefly on Thea sinensis plants in a large shipment of nursery stock from the State of Georgia. Georgia is one of the States covered by quarantine for this pest. The discovery of the insects in this case is of added importance in that Thea sinensis heretofore has not been known to be a host of the whitefly. Another interception of whitefly material of unusual occurrence was made by Inspector Williams when he found Camellia plants of a more common variety in nursery stock brought down by automobile from the whitefly section near Sacramento. The inspection was made after a manifest was received by the County Horticultural Commissioner from the nursery where the plants were purchased. The material was destroyed.

TRUCK - CROP INSECTS

A MOLE CRICKET (Scapteriscus acletus R. & H.)

Mississippi

R. W. Harned (February 28): Mole crickets identified by Mr. Caudell of the National Museum as Scapteriscus acletus were received on January 14 from Lyman. The correspondents wrote: "They plow close to the surface of the ground, eat the seed, and spoil the beds."

VEGETABLE WEEVIL (Listroderes obliquus Gyll.)

Mississippi

R. W. Harned (February 28): Complaints are received almost every day regarding the vegetable weevil. So far spinach, turnips, and cabbage are the only crops that have been seriously injured. During the past few days specimens have been received from Natchez, Tylertown, Summit, and Perkinston. (March 27): The vegetable weevil continues to cause much damage to plants

of various kinds throughout the southern half of the State. Truck growers at Crystal Springs in Copiah County reported them on March 20 as being very abundant and causing serious damage to carrots and tomatoes. Cabbages at Laurel were reported as being seriously injured on March 8, while severe damage to turnips was reported from Hattiesburg on March 12. A correspondent at Church Hill wrote on March 18 in regard to them as follows: "They have eaten my cabbage plants and are in the ground around the plants. They have eaten the leaves, buds, and all of the stem. Sometimes I find 8 or 10 around each plant." Serious damage to cabbage was reported by a correspondent at Goshen Springs on March 26.

HARLEQUIN BUG (Murgantia histrionica Hahn)

Mississippi

R. W. Harned (March 27): Specimens of the harlequin bug were received from Jackson March 26 with the report that they were seriously injuring turnips and mustard. Specimens were received from Greenwood on the same date with the report that young cabbage plants had been seriously injured by them.

J. P. Kislanko (March 25): Murgantia histrionica was observed in large quantities feeding on cabbage at Wiggins.

STRAWBERRY

STRAWBERRY ROOT APHID (Aphis forbesi Weed)

Mississippi

R. W. Harned (March 27): Specimens of the strawberry root louse were collected on strawberries at Natchez on March 9, where they were reported as causing some injury. Serious damage to strawberries was reported as being caused at Tribbett on March 19.

PEAS

PEA APHID (Illinoia pisi Kalt.)

Florida

F. S. Chamberlin (March 26): Pea aphids are unusually abundant and severe damage has been sustained in many instances.

TOMATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

Mississippi

J. P. Kislanko (March 25): The first Colorado potato beetle for this season was observed on a tomato plant on March 25.

ONION

ONION THRIPS (Thrips tabaci L.

Texas

F. L. Thomas & S. W. Clark (March 7): Large areas in the

vicinity of Laredo are planted to onions. A severe infestation of the onion thrips has developed in one section, affecting several hundred acres. Lady beetles (Hippodamia convergens Guer.) were imported from Colorado by a large grower but were making no impression on the infestation. The source of the infestation was broccoli which had been planted abundantly in this particular district. Broccoli has recently been introduced into the south Texas vegetable cropping scheme and is a host plant of the onion thrips.

TURNIP

POPLAR LEAF STEM GALL (Pemphigus populi-transversus Riley)

Mississippi

R. W. Harned (February 28): Aphids that were very abundant on the roots of turnips at Perkinson on February 25 have been identified by A. L. Hamner as Pemphigus populi-transversus.

S O U T H E R N F I E L D- C R O P I N S E C T S

TOBACCO

TOBACCO FLEA BEETLE (Epitrix parvula Fab.)

Florida

F. S. Chamberlin (March 26): Flea beetles are unusually numerous on newly set tobacco plants in Gadsden County.

SLUGS (Mollusca)

North Carolina

J. N. Tenhet (March 20): Slugs are doing widespread damage to tobacco seed beds throughout the old South Carolina bright tobacco belt. Numerous beds in almost every community have been totally destroyed. In many communities the situation is serious. This pest has never been known to attack tobacco plant beds in this section (Chadbourn) before.

F O R E S T A N D S H A D E - T R E E I N S E C T S

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Ohio

E. W. Mendenhall (March 27): Bagworm winter cases are very abundant in Columbus and vicinity. They are found in nearly all kinds of shade trees and even on shrubbery. They are also found on cedar and other evergreen trees. They were also found abundantly at Circleville and in Springfield and Clark Counties.

EASTERN TENT CATERPILLAR (Malacosoma americana Fab.)

Mississippi

J. P. Kislanko (March 25): The first colony for this season of tent caterpillars, apparently Malacosoma americana, was observed on wild plum on March 25.

CANKER WORMS (Geometridae)

Kansas

R. L. Parker (March 18): The first female spring canker worm (Paleacrita vernata Peck) emerged at Manhattan on February 22. The first female fall canker worm (Alsophila pometaria Harris) emerged at Manhattan on February 22. There has been a slow increase of the emergence of the canker worms, with considerable fluctuation in the weather, especially temperature.

On March 14 we had our highest emergence so far this season - 131 female spring canker worms and 110 males of both species were taken from one elm tree. Other tree records have been going well over a hundred in counts for the spring canker worm females and also large numbers of males. The record of the males has not been segregated as to species. Records for the fall canker worms are now very few.

ARBORVITAE

AN APHID (Dilachnus thujaefolia Theob.)

Mississippi

R. W. Harned (March 27): Arborvitae plants throughout the State have been attacked recently by plant lice or aphids belonging to the species Dilachnus thujaefolia. Many complaints regarding these insects have been received.

BOXELDER

BOXELDER BUG (Leptocoris trivittatus Say)

Kansas

J. W. McColloch (March 14): The boxelder bug has proved a great nuisance in houses and stores at Mankato, Long Island, and Clyde.

CEDAR

DEODAR WEEVIL (Pissodes deodarae Hopk.)

Mississippi

R. W. Harned (March 27): The deodar weevil has been reported causing serious injury to Cedrus deodara at Picayune, Durant, and Meridian, during the past month.

HICKORY

A CURCULIO (Conotrachelus sp.)

Mississippi

J. P. Kislanko (March 25): A species of Conotrachelus was collected at Wiggins ovipositing and feeding on new growth of hickory. Some of the eggs were already hatched and the larvae were feeding on the inside of the petioles. Several minute apparently egg parasites were observed in the vicinity of weevil punctures and on the leaves. Additional observations will be made to note the extent of injury to hickory.

MAPLE

MAPLE BORER (Synanthedon acerni Clem.)

Ohio E. W. Mendenhall (March 27): I find the maple trees in street planting, especially in Newark, and towns in Licking County, affected with the maple borer which is shortening the lives of the shade trees.

OAK

HORNED OAK GALL (Andricus cornigerus O.S.)

Mississippi R. W. Harned (March 27): Galls tentatively identified as the horned oak gall, Andricus cornigerus, were collected recently at Pontotoc and Corinth. At each place oak trees were heavily infested. The species also occurs at a number of places throughout the State.

WILLOW

OAK KNOT GALL (Andricus punctatus Bass.)

Mississippi R. W. Harned (March 27): Galls on willow and water oak trees at DeKalb were collected on February 2 and identified by E. P. Felt as the gouty oak gall caused by Andricus punctatus. The trees were quite heavily infested. This species occurs at a number of places throughout the State.

INSECTS ATTACKING GREENHOUSE
AND ORNAMENTAL PLANTS

CHRYSANTHEMUM

CHRYSANTHEMUM GALL MIDGE (Diarthronomyia hypogaea Loew)

Mississippi R. W. Harned (February 28): Specimens of the chrysanthemum gall midge on chrysanthemums were collected on January 7 from the property of the Tupelo Floral Company, Tupelo.

CREPE MYRTLE

CREPE MYRTLE APHID (Myzocallis kahawaluokalani Kirk)

Georgia T. L. Bissell (March 26): Eggs hatching abundantly on March 25 at Barnesville, and on March 26 at Griffin on crepe myrtle. The host plant shows no sign of activity.

FERNS

FERN SCALE (Hemichionaspis aspidistrae Sign.)

Ohio

E. W. Mendenhall (March 26): The fern scale is quite abundant on Boston ferns in some of the greenhouses in Springfield.

SOFT SCALE (Coccus hesperidum L.)

Ohio

E. W. Mendenhall (March 26): I find the soft brown scale on ferns in some of the greenhouses in Springfield.

HOLLYHOCK

GREEN PEACH APHID (Myzus persicae Sulz.)

Mississippi

R. W. Harned (March 27): Aphids identified by A. L. Hamner as Myzus persicae Sulz. were quite abundant on hollyhocks at Vicksburg on March 6.

ROSE

POTATO APHID (Illinoia solanifolii Ashm.)

Mississippi

R. W. Harned (March 27): Aphids that have been identified as Macrosiphum rosaefolium by A. L. Hamner were very abundant on roses at Yokena, on March 19, and at Okolona on March 25.

ROSE SCALE (Aulacaspis rosae Bouche)

Ohio

E. W. Mendenhall (March 27): I find the rose scale is quite abundant in Dayton and vicinity on home plantings of roses, causing some damage.

WISTERIA

LOCUST TWIG BORER (Ecdytolopha insiticihana Zell.)

Mississippi

R. W. Harned (March 27): Wisteria twigs showing injury similar to that caused by Ecdytolopha insiticihana were received from Corinth on March 18.

INSECTS ATTACKING MAN AND
DOMESTIC ANIMALS

MAN

HOUSE FLY (Musca domestica L.)

Missouri L. Haseman (March 25): The house fly has begun to appear in small numbers at Columbia.

CLUSTER FLY (Pollenia rudis Fab.)

New York F. C. Bishopp (February 23-27): Reports of household infestation of the cluster fly have come in from Ithaca and Pittsford. According to the statement received from the latter locality they are annoying on the second floor as well as in the attic on any warm day.

HORSE

NOSE BOTFLY (Gastrophilus haemorrhoidalis L.)

Illinois F. C. Bishopp and R. W. Wells (February 11): Nose flies are reported to be very annoying to horses in this locality (Urbana). Apparently they have been present for about 5 years.

CATTLE

COMMON CATTLE GRUB (Hypoderma lineatum DeVill.)

Pennsylvania H. S. Peters (February 16): At Pittsburg, four herds with a total of 207 cows showed an average of 0.35 grub per animal. No larvae in the fifth instar were found.

Ohio H. S. Peters (February 12): Fifty cattle at Columbus and 128 at Lancaster showed no infestation.

Indiana H. S. Peters (February 8): At Terre Haute, a total of 174 cattle (5 herds) showed an average of 1.5 grub per animal. One of these herds of 66 head was uninfested, while another herd of 27 cows had 163 grubs. Nearly all of the larvae were in the fourth and young fifth instars.

Illinois H. S. Peters (February 7): At Cairo 44 cows were examined and an average of 0.63 grubs found. At Effingham, 29 head had an average of 0.21 per animal. No mature larvae were found in either locality, the oldest being very young ones of the fifth instar.

F. C. Bishopp and R. W. Wells (February 10): Several herds of

cattle which were examined at Urbana showed no grubs in their backs. Apparently grubs are not numerous in native cattle in this locality. (February 11): Cattle in the vicinity of Peoria showed a moderate infestation of grubs in their backs, ranging from 0 to about 40. The oldest larvae observed were in the light brown fifth stage.

Minnesota

W. G. Bruce (February 12): Of 104 cattle examined in this locality (Mankato) none showed grubs in their backs.

Iowa

W. G. Bruce (February 11): Ninety-nine cattle examined were found to be free from grubs at Sioux City.

Nebraska

W. G. Bruce (February 10): Sixty-seven head of cattle were examined at Lincoln and showed an average of 1 grub each. All stages from third to mature, were present.

Kansas

W. G. Bruce (February 1 - 9): The average number of grubs per cow in several localities was as follows: Wellington, 50 head, 1.4; Hutchinson, 85 head, 1.; Clay Center, 21 head, 2.8; Manhattan, 97 head, 0.4. All larvae were extracted and all stages which occur in the back were found.

Tennessee

H. S. Peters (February 5): An average of 0.72 grub per head was found in 148 cattle examined at Memphis. Although some of the larvae were in the fourth stage most were nearing maturity.

Arkansas

H. S. Peters (February 4): An average of 1.64 grubs per head were found in 66 cattle examined at Hot Springs. All larvae extracted were nearly mature. Examined 119 cattle and found an average of 1.5 grubs per head at Little Rock. Some larvae were still in the fourth instar but most were in the light brown fifth stage.

Oklahoma

W. G. Bruce (February 1): An average infestation of 0.88 grub per head was found here (Oklahoma City) on 139 animals. All stages of larvae from thirds to mature fifth were present.

Texas

E. W. Laake (February 6): An examination of 48 head of cattle here (Houston) showed an average of 1.6 grubs per head. All larvae were extracted and only four specimens in the 4th instar were found.

BITING CATTLE LOUSE (Trichodectes scalaris Nitzsch)

Ohio

H. S. Peters (February 12): A moderate infestation was found at Lancaster on three young heifers.

POULTRY

FEATHER MITE (Liponyssus silvianus C. & F.)

Virginia

F. C. Bishopp (December 21, 1928): This mite was found to be established and causing considerable loss in a commercial poultry plant near here (Strassburg). Steps are being taken to eradicate

Ohio C. R. Cutright (February 13): A commercial poultry plant here (Wooster) was found to be infested with this mite.

HOUSEHOLD AND STORAGE PRODUCT INSECT

GREEN BOTTLE FLY (Lucilia caesar Meig.)

Missouri L. Haseman (March 25): The unusual abundance of large green blowflies is on wing.

TERMITES (Reticulitermes spp.)

Kansas J. W. McColloch (March 14): The first swarm of the year was noted on March 14, at Manhattan, following a spring rain. (March 20): Injury to woodwork in dwellings has been reported during the last month from Oak Hill, Vermillion, Lindsburg, McPherson, Minneapolis, and Olathe. Cherry and peach trees injured at Frederick.

Missouri K. C. Sullivan (March 25): Termites (Reticulitermes sp.) in heated buildings at Columbia recently found to be swarming. This pest is becoming more serious every year and doing much damage to buildings.

Texas F. L. Thomas (March 20): We have several persons who own homes in our town (Richmond, Ft. Bend County) and their homes are gradually being eaten up by white ants. These insects have gone so far as to eat through hardwood floors, and also the rugs on the floor. It is not known what extent of damage has already been done on these houses but more than likely it was much more than is realized by the owners.

ARGENTINE ANT (Iridomyrmex humilis Mayr)

Mississippi R. W. Harned (March 27): The Argentine ant has been found at two places, Duckhill and Dossville, during 1929. This species had not been reported heretofore from these localities.

YELLOW ANT (Lasius interjectus Mayr)

Kansas J. W. McColloch (March 21): This household ant was observed from around the foundations of houses at Manhattan today. This is the first swarming of the year.

POWDER POST BEETLES (Lyctus spp.)

Georgia O. I. Snapp and H. W. Swingle (March 20): Many handles (fork, shovel, etc.) were ruined in a local hardware store by a very heavy infestation of powder-post beetles. The damage was such that the handles would break with very little force.

Kansas J. W. McColloch : Oak flooring in a house at Herington has been damaged by these beetles.

SEED CORN BEETLE (Agonoderus pallipes Fab.)

Kansas J. W. McColloch (March 21): A heavy flight of these beetles occurred in the vicinity of Manhattan today.

CIGARETTE BEETLE (Lasioderma serricorne Fab.)

Kansas J. W. McColloch (March 5): An infestation in upholstered furniture in a house at Kansas City was found on March 5.

Ag. 10: V. 9: 3

AGRICULTURE
CLEMSON COLLEGE

THE INSECT PEST SURVEY BULLETIN

A periodical review of entomological conditions throughout the United States
issued on the first of each month from March to December, inclusive.

Volume 9

May 1, 1929

Number 3

BUREAU OF ENTOMOLOGY
UNITED STATES
DEPARTMENT OF AGRICULTURE
AND
THE STATE ENTOMOLOGICAL
AGENCIES COOPERATING

Clemson College Library

INSECT PEST SURVEY BULLETIN

Vol. 9

May 1, 1929

No. 3

OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR APRIL, 1929.

The Mediterranean fruit fly, an extremely destructive pest of fruits and vegetables, was discovered at Orlando, Florida, April 6, and is now known to be present at points in six counties in east-central Florida. A resume of the situation appears in this number of the Bulletin.

Wireworms are attracting considerable attention this spring throughout practically the entire United States, reports having been received from New Jersey to South Carolina and westward to Idaho and California. In many cases the wireworms are reported as considerably more abundant than usual, although little damage has been occasioned up to this time.

The Asiatic beetle was found approaching the surface of the ground on April 5, about two weeks earlier than usual, in Connecticut, and was apparently more abundant.

Although reports of cutworms have been received from practically all of the country south of Connecticut, the worms do not, on the whole, seem to be abnormally numerous except in restricted districts.

The Hessian fly started emerging in southern Illinois during the last week in March and the first week in April. No reports of unusual abundance have been received up to May 1.

From present indications the chinch bug is still subnormal in abundance. On March 26 a flight of adults was observed in Christian County, Illinois.

A rather unusual infestation was reported from North Carolina where the leaf-footed bug (Leptoglossus phyllopus L.) was feeding on the developing grains in wheat heads on land where this insect destroyed the seed crop of cowpeas last fall.

Aphids on grain and forage crops in western Washington and Oregon are remarkably scarce this spring. For the first time in the past 12 years it has been difficult to obtain specimens of any of the important species during early April.

Orchard aphids began hatching unusually early this year in the New England States. The earliest observation of eggs hatching in Massachusetts was made on March 21. The aphids are apparently abnormally abundant in

New England and the Middle Atlantic States and more abundant than for the past several years in the Southeastern and East Central States.

The earliest emergence of the codling moth this year was reported from Georgia April 4. South Carolina reported the earliest emergence as April 8. Although reported as very abundant from several States, conditions in general are apparently about normal.

The eastern tent caterpillar is apparently decreasing in numbers in the New England and Middle Atlantic States and increasing from Virginia southward.

The San Jose scale is reported as from scarce to moderately abundant throughout practically the entire country, although there seems to be a tendency for it to increase slightly in Massachusetts and Illinois. The oyster-shell scale is increasing in Illinois.

The first plum curculio of the season in the Middle Atlantic States was reported from Delaware April 4, and from the East Central States, in Illinois, on April 6. This insect seems to be abnormally abundant from the Middle Atlantic States southward to Georgia. In the latter State the infestation appears to be the heaviest since the serious outbreak in 1921.

The oriental fruit moth began emerging April 4 in Delaware, nearly three weeks ahead of the first emergence for the past four years. The first twig injury was observed in Georgia three weeks earlier than last year, this injury being observed April 4 this year and April 25 last year.

The vegetable weevil has been unusually abundant in the southern half of Mississippi, in many instances seriously damaging a great variety of truck crops.

During the last week in March the harlequin bug was reported as seriously damaging truck in Delaware. On March 29 it was very numerous in eastern Virginia, and a very heavy infestation was under way in the Chadbourn district of North Carolina by that time. Reports of serious infestations were also received from South Carolina and Mississippi.

The heaviest infestation of the strawberry weevil in the past 10 years was under way during the last week of March in the Chadbourn district of North Carolina, and by March 27 over one-fourth of the crop had been destroyed in some plantings.

The Mexican bean beetle appeared April 19, which is 11 days earlier than last year, in South Carolina. It was observed feeding on this date in North Carolina, while in Mississippi the first adults were observed April 23.

The bean leaf beetle is seriously damaging beans in South Carolina, Georgia, and Mississippi. In the latter State 75 per cent of some fields has been destroyed.

The seed corn maggot in general is not abnormally abundant over the Eastern States, but in the Norfolk trucking section it has occasioned serious losses.

The gray sugarcane mealybug (Pseudococcus boninsis Kuwana) is recorded for the first time from Mississippi, where it was collected late in March at Melton.

Very serious injury to forest nursery seedlings (coniferous evergreens) by the strawberry root weevil is reported from Michigan. This is the first record of this kind in Michigan in the past 30 years.

A very heavy infestation of pine by the sawfly Neodiprion dyari Roh. is reported from Madison County, North Carolina.

Buffalo gnats are again appearing in the Yazoo region of Mississippi where reports of fatalities among mules and horses are already being received. A similar outbreak occurred last year in this region.

OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR APRIL, 1929.

The field and garden crops of Canada, during 1928, were comparatively free from severe losses due to insect depredations.

The outbreak of the Bertha armyworm, Berathra configurata Walk., during 1928 affected Manitoba, Saskatchewan, Alberta, and a large part of British Columbia, causing losses principally to sweet clover, alfalfa, flax, and garden crops. Destructive outbreaks of this insect are of recent date.

Indications point to a repetition during 1929 of the outbreak of the bronzed cutworm, Nephelodes emmedonia Cram., in the Tantramar Marshes, New Brunswick, where last year it destroyed 2,000 acres of hay crop.

Grasshoppers are reported as increasing in sandy localities of Manitoba, and also in the Bulkley Valley, Nicola Valley, and the Chilcotin and Fraser River areas, in British Columbia.

Wireworms continue to be the most serious insect pest of the prairies. In Saskatchewan the loss of the wheat crop in 1928 was estimated at nearly \$4,000,000.

The wheat stem sawfly, Cephus cinctus Nort., was at its lowest ebb for some years, during 1928. The loss occasioned by this insect, however, was estimated at well over \$4,000,000, in Saskatchewan alone.

The Colorado potato beetle is reported as decidedly on the increase in Manitoba and elsewhere in the Prairie Provinces.

From present indications it would appear that the European apple sucker, Psylla mali Schm., will be somewhat more prevalent in the Annapolis Valley, Nova Scotia, during 1929 than last year.

In British Columbia, the most active outbreaks of forest insects in the interior at the present time consist of the bark beetles, Dendroctonus monticolae Hopk., in lodgepole pine, and D. pseudotsugae Hopk., in Douglas fir. In addition there is the periodical outbreak of the spruce budworm, Harmoloba fumiferana Clem., in the Cariboo district, and, on the Pacific coast this species and the hemlock looper, Ellopija fiscellaria Guen. are the most troublesome defoliators.

The fall canker worm, Alsophila pometaria Harr., is on the increase in Manitoba. Damage to shade tree belts is expected during 1929.

The species Patodes angustiorana Haw. was recorded for the first time in North America in 1928, in the gardens of the Parliament Buildings, Victoria, British Columbia, causing damage to pyramidal yews. Indications of its presence were also seen at Oak Bay.

There is every indication of a more extensive outbreak of the lime-tree looper, Erannis tiliaria Harr. in 1929, in the Brandon Hills, Manitoba, where last year a variety of trees and shrubs were severely attacked by this species.

Cases of tick paralysis affecting humans have been reported from Rawleigh and Wellington, British Columbia. The wood tick, Dermacentor venustus Banks, was the species responsible.

GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

Georgia M. S. Yeomans (April 22): Grasshoppers are moderately abundant on peaches.

South Carolina M. H. Brunson (April 20): Grasshoppers have been damaging young tobacco plants in a field at Lake City but in general they are scarce.

Kentucky H. Garman (April): Grasshoppers are moderately abundant.

WIREWORMS (Elateridae)

New Jersey T. J. Headlee (April 22): Wireworms are moderately abundant.

Indiana J. J. Davis (April 27): Wireworms are moderately abundant in low areas throughout the State.

Illinois W. P. Flint (April 22): Wireworms are moderately abundant.

Kentucky H. Garman (April): Wireworms are moderately abundant.

Missouri L. Haseman (April 24): One species of click beetle, identity unknown, has been quite abundant under codling moth bands since the middle of April. Wireworms moderately abundant at Columbia.

Alabama O. T. Deen (March 19): On this date adults of *Heteroderas* and other species of click beetles were found feeding on old sweet potatoes which were scattered around in an old dirt storage bank at Theodore. Numerous other inspections in this vicinity failed to locate adults at any other place. The adult click beetles usually emerge in this section much later than the above date.

Mississippi R. W. Harned (April 28): J. P. Kislanko reported on April 19 that wireworms and *Diabrotica* larvae were so abundant in a 1-acre field of watermelons at Wiggins that practically all the plants were ruined.

Idaho Claude Wakeland (April 22): Wireworms, *Pheletes occidentalis* Cand., just becoming active at Parma. Lately emerged adults just becoming active.

Texas F. L. Thomas (April 25): These insects seem to be unusually abundant in the vicinity of College Station this year. Corn has been replanted in several fields. This is the first time such a complaint has been received in the five years I have been here.

California R. E. Campbell (April 1): Potato seed pieces planted about March 1 became so badly damaged by *Pheletes californicus* Mann. that treatment was required at Redlands. After being in the ground 6 days, the pieces averaged 6 worms apiece.

M. W. Stone (April 1): Adults of Pheletes californicus were first collected on March 4 and by April 1 were very abundant. First eggs were laid by caged females on March 27 at Alhambra.

South Carolina M. H. Brunson (April 20): Horistonotus uhlerii Horn is moderately abundant in Hampton and bordering counties.

WHITE GRUBS (Phyllophaga spp.)

Connecticut W. E. Britton (April 23): Moderately abundant and occasionally abundant.

Virginia P. J. Chapman (April 22): White grubs are scarce in eastern Virginia.

Indiana J. J. Davis (April 26): May beetles were out on the night of April 6 and again on the 7th at Lafayette. This is an unusually early record.

Illinois W. P. Flint (April 22): White grubs are scarce.

Kentucky H. Garman (April): White grubs are moderately abundant.

Missouri L. Haseman (April 24): First June beetles to appear on the wing showed up at Columbia April 20, though the beetles are abundant just under the surface of the soil and the grub worms are unusually abundant.

Kansas J. W. McColloch (April 22): The first flight of May beetles, Phyllophaga rubiginosa Lec., occurred on the night of April 6. No further flights occurred until April 18.

ASIATIC BEETLE (Abomala orientalis Waterh.)

Connecticut W. E. Britton (April 26): Grubs were near the surface on April 5, some two weeks earlier than usual, at New Haven and West Haven. More abundant, compared with average year.

CUTWORMS (Noctuidae)

Connecticut W. E. Britton (April 23): Peridroma saucia Hbn. was observed this spring moderately abundant.

New Jersey T. J. Headlee (April 22): Cutworms are scarce.

Virginia P. J. Chapman (April 22): Cutworms are scarce in eastern Virginia.

North Carolina C. H. Brannon (April 19): Cutworms are moderately abundant at Raleigh.

South Carolina M. H. Brunson (April 20): Cutworms have been extensively damaging transplanted tobacco plants at Lake City but in general are scarce.

- Illinois W. P. Flint (April 22): Cutworms are moderately abundant.
- Kentucky H. Garman (April): Cutworms are very abundant.
- Missouri L. Haseman (April 24): Scarce at Columbia.
- Mississippi R. W. Harned (April 22): Cutworms, tentatively identified as Feltia annexa Treit., were reported as causing serious injury in tomato plant beds at Brookhaven on April 15.
- Texas F. L. Thomas (April 25): Cutworms at College Station are moderately abundant, also abundant in the Rio Grande Valley.
- Arizona O. L. Barnes (February 27): Feltia annexa Treit. feeding on cabbage heads on a farm 2 miles northwest of Phoenix. Little damage.

CEREAL AND FORAGE-CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

- New Jersey H. B. Weiss (April 20): This insect is scarce in the northwestern part of the State.
- Delaware H. L. Dozier (April 20): The Hessian fly is moderately abundant in Delaware.
- Indiana J. J. Davis (April 27): The Hessian fly is moderately abundant to very abundant in southwestern Indiana.
- Illinois W. P. Flint (April 16): Adults of the Hessian fly started emerging in southern Illinois during the first warm period the latter part of March and first of April. There are still some flies to emerge in the central part of the State. It is too early as yet to make any statement regarding the intensity of the spring infestation. (April 22): This insect is moderately abundant.
- Kentucky H. Garman (April): The Hessian fly is now scarce. It was formerly very common.
- Missouri L. Haseman (April 24): Moderately abundant at St. Louis and Elsberry and scarce at Columbia.

CHINCH BUG (Blissus leucopterus Say)

- Illinois W. P. Flint (April 22): The chinch bug is scarce.
- J. H. Bigger (March 26): First observed flight of adults in

Christian County. Probably flight occurred a few days previous but no reporter was in this section at that time.

Kentucky H. Garman (April): The chinch bug is scarce.

LEAF-FOOTED BUG (Lentoglossus phyllopus L.)

North Carolina W. A. Thomas (April 5): This insect is now appearing in fairly large numbers at Chadbourn on heading wheat, where they seem to be feeding on the developing grain within the heads. In the same area where they are now feeding on wheat their attacks on young cowpea pods were so serious last fall that practically no seed matured.

Georgia T. L. Bissell (April 4): Found two adults between leaf bracts of yellow-flowered thistle. (April 20): Adults commonly seen mating on thistle stalks at Milner.

ENGLISH GRAIN APHID (Macrosiphum granarium Kirby and
APPLE GRAIN APHID (Rhopalosiphum prunifoliae Fitch)

Oregon L. P. Rockwood (April 5): The grain aphids are remarkably scarce at this time in Washington and Clackamas Counties. Four or five Macrosiphum granarium were swept in one wheat field after considerable sweeping. None found in other fields swept. March and April were theoretically favorable to aphids. The precipitation was less than normal but apparently few survived the winter.

SEED SPRINGTAIL (Onychiurus pseudarmatus Folsom)

New Mexico J. R. Eyer (April 27): At Raton this insect is injurious to newly sown wheat.

CORN

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

Rhode Island A. E. Stene (April 20): The European corn borer is moderately abundant in most places but very abundant in a few.

New York P. J. Parrott (April 20): Moderately abundant in this section (Geneva).

CORN EAR WORM (Heliothis obsoleta Fab.)

Texas F. L. Thomas (April 25): The corn ear worm at College Station is very abundant. It appears to be moderately abundant at all times, but this year more than usual has been observed.

SMARTWEED BORER (Pyrausta ainaliei Heinrich)

Delaware H. L. Dozier (April 10): Specimens determined by Carl Heinrich as the smartweed borer were brought in from near Delmar during March with the report that they were very abundant in old corn-

stalks in the field. Their work was typical of that of the European corn borer.

Nebraska

M. H. Swenk (January 1-April 15): The smartweed borer was found boring cornstalks, and subsequently sent in for identification from Gage County on January 17 and from Thayer County on April 12.

STALK BORER (Papaipema nebris nitela Guen.)

Kentucky

H. Garman (April): The stalk borer is moderately abundant.

SEED CORN MAGGOT (Hylemyia cilicrura Rond.)

New York

P. J. Parrott (April 20): Too early for the seed corn maggot in this section (Geneva).

Pennsylvania

T. L. Ghyton (April 22): The seed corn maggot is absent in this State.

Virginia

P. J. Chapman (April 22): Very abundant in eastern Virginia.

North Carolina

C. H. Brannon (April 19): The seed corn maggot is moderately abundant at Lumberton.

Kentucky

H. Garman (April): The seed corn maggot is scarce, taking the State as a whole.

FALL ARMYWORM (Laphygma frugiperda S. & A.)

Louisiana

W. E. Haley (April 5): Larvae of the fall armyworm, one-half or three-quarters grown, were found in Terrebonne Parish.

SEED CORN BEETLE (Agonoderus pallipes Fab.)

Nebraska

M. H. Swenk (January 1 - April 15): Several correspondents reported great numbers of the seed corn beetle appearing during the first week in April. They were attracted to lights in abundance during that week.

Kansas

J. W. McColloch (April 4): Beetles of this species were swarming in the air just before sundown on April 4 at Lovewell.

CORN BILLBUG (Sphenophorus aequalis Gyll.)

Georgia

O. I. Snapp (April 20): A heavy infestation in corn planted in low land in Montezuma.

CLOVER, ALFALFA, AND VETCH

PEA APHID (Illinoia pisi Kalt.)

Virginia

G. E. Gould (April 18): The pea aphid was common on alfalfa throughout the winter and increased this spring to such an extent

as to cause injury at Norfolk, Princess Anne County. At present it appears to be held in check by parasites and a fungus.

The winged forms of the pea aphid were first found on peas on March 27. Two weeks later the winged individuals were quite numerous and on April 18 the aphids were causing slight damage.

Arizona

O. L. Barnes (April 23): On April 10 and 13, the pea aphids were found in several alfalfa fields west and south of Phoenix. The abundance varies widely, but in some fields the infestation is high, especially in localized areas. However, later observations show the numbers of the insects to be more uniformly distributed over the fields.

Oregon

L. P. Rockwood (April 5): Pea aphids on vetch are practically nonexistent in Washington and Clackamas Counties to date, according to our observations. We finally swept two immature specimens from vetch seed August 15, which would ordinarily be well infested. Pea aphids have not been so scarce at this time of year in this area in the 10 or 12 years we have been located here.

CONPEA APHID (Aphis medicaginis Koch).

Arizona

O. L. Barnes (March 15): Very abundant on clover in at least one field west of Phoenix.

CLOVER LEAF WEEVIL (Hypera punctata Fab.)

Pennsylvania

F. B. Fetrow (April 5): Larvae attacking clover in lawn and doing considerable damage.

Missouri

L. Haseman (April 24): Larvae feeding abundantly though not attracting farmer's attention. (K. C. Sullivan.)

RANGE GRASS

NEW MEXICO RANGE CATERPILLAR (Hemileuca olivia Ckll.)

New Mexico

J. R. Eyer (April 27): At Roy these insects appear very abundant. Egg masses on many trees and shrubs this winter.

F R U I T I N S E C T S

APPLE

APHIDS (Aphididae)

Massachusetts

A. I. Bourne (April 22): Orchard plant lice began hatching early this season. They reflected the abnormally high temperatures of late March and early April. Prof. Whitcomb in Middlesex County noted the first hatching on March 31. We noted hatching here at Amherst on April 3 to 5. On the latter date the lice

were out in large numbers. Plant lice are very abundant this season generally over the State, and rather more abundant than normal, in marked contrast to a year ago when throughout the State they were practically absent. The low temperature and snow subsequent to their hatching have not appeared here at the College or to the east of us to have caused any significant mortality. In the hill orchards to the west, where conditions were much more severe, there is considerable evidence of high mortality. This point can not be accurately checked, however, until seasonable temperatures are again encountered and we get back to normal conditions.

Delaware

H. L. Dozier (April 20): Fruit aphids, especially the green apple aphid, are extremely abundant. Eggs have been hatching for several weeks.

Virginia

W. J. Schoene (April 20): Dr. W. S. Hough reports from the Winchester laboratory as follows: The apple grain aphid was observed hatching on March 16 and by March 21 the buds were showing a small amount of green and eggs were hatching in large numbers. The green aphid was abundant everywhere March 23. The first rosy apple aphids were observed hatching March 23, and on April 6 we found a few leaves which had been curled. The first adult stem mother was found April 7 and the first individuals of the second generation were found April 8. Syrphid flies and adult lady beetles are very abundant in certain orchards.

At Blacksburg the aphids are more numerous than for some years. There is a good sprinkling of rosy aphids and a heavy infestation of grain aphids. The predators are also present in large numbers.

South Carolina

E. Sherman (March 27): Aphids have been reported on roses, and inquired about with reference to other plants.

Illinois

J. H. Bigger (March 25): Aphids hatching in very great numbers in Morgan and Scott Counties March 23 and 25. Up to date only grain aphids seen. Numbers hatched indicated that very few eggs remain and other species will probably be in small numbers.

Kentucky

H. Garman (April): Apple aphids are very abundant.

Missouri

L. Haseman (April 24): Apple leaf aphid moderately abundant at Columbia.

APPLE APHID (Aphis pomi DeG.)

New Hampshire

P. R. Lowry (April 23): The green apple aphid is moderately abundant at Durham, and very abundant at Nashua where the young stem mothers were common April 12.

Connecticut

Phillip Garman (April 24): Aphids hatched early owing to a warm spell in early April in New Haven County, but have not in-

creased since, and in some localities have decreased on account of unfavorable weather conditions.

W. E. Britton (April 23): Very abundant in Hamden and New Haven.

New York

P. J. Parrott (April 20): Very abundant in the Geneva section of New York.

New Jersey

T. J. Headlee (April 22): This insect is moderately abundant.

Indiana

J. J. Davis (April 26): Apple aphids are abundant on apple in many sections of the State. On April 3 stem-mothers were observed at Vincennes giving birth to their first young.

Illinois

W. P. Flint (April 22): The apple aphid is very abundant.

Missouri

L. Haseman (April 24): During April we usually have in central Missouri a serious epidemic of this louse but it has been unusually scarce this spring.

Washington

E. J. Newcomer (April 22): Has been more abundant than usual this year.

ROSY APPLE APHID (Anuraphis roseus Baker)

Connecticut

W. E. Britton (April 23): Very abundant in Hamden and New Haven.

New York

P. J. Parrott (April 10): As a result of high temperatures last Saturday, Sunday, and Monday, many of the apple buds show heavy infestation of aphids and in some orchards approximately 40 per cent of the nymphs at the ends of the buds are rosy aphids. Last night the temperature dropped to 28 degrees and I am not certain what has been the effect on the aphids. However, we have extensive experiments under way and because of our experimental activities I am sincerely hoping that as far as our experimental orchards are concerned the drop in temperature has not been fatal to the newly hatched nymphs.

C. R. Crosby (April 22): The rosy apple aphid is very abundant.

New Jersey

T. J. Headlee (April 22): The rosy apple aphid is moderately abundant.

Pennsylvania

T. L. Guyton (April 22): Anuraphis roseus Baker, is very abundant at Harrisburg.

Virginia

P. J. Chapman (April 22): Anuraphis roseus Baker is scarce in eastern Virginia.

Indiana

J. J. Davis (April 27): Some rosy apple aphids are appearing.

Idaho C. Wakeland (April 22): Anuraphis roseus Baker moderately abundant in Idaho.

APPLE GRAIN APHID (Rhopalosiphum prunifoliae Fitch)

New York P. J. Parrott (April 20): Very abundant in the Geneva section of New York.

New Jersey T. J. Headlee (April 22): This insect is very abundant.

Pennsylvania T. L. Guyton (April 22): R. prunifoliae Fitch is very abundant at Harrisburg.

Ohio D. M. DeLong (April 26): Apple grain aphid was observed hatching in the vicinity of Columbus on March 21.

Indiana J. J. Davis (April 27): Aphis avenae is moderately abundant.

Illinois W. P. Flint (April 22): The apple grain aphid is moderately abundant.

WOOLLY APPLE APHID (Eriosoma lanigerum Hausm.)

New Mexico J. R. Eyer (April 27): Fruit aphids, species of the woolly apple aphid, Eriosoma lanigerum, very abundant, appearing generally in all fruit sections.

CODLING MOTH (Carpocapsa pomonella L.)

New Hampshire P. R. Lowry (April 23): The codling moth is found in very small numbers at Nashua, Wilton, and Durham.

New York P. J. Parrott (April 20): Moderately abundant in the Geneva section of New York.

Delaware H. L. Dozier (April 20): The codling moth is moderately abundant in the pupal stage, and emergence is expected within 10 days.

South Carolina M. H. Brunson (April): First emergence of the codling moth in cages noticed on April 8, abundant on 9th and 10th at Clemson College.

Georgia M. S. Yeomans (April 4): First moth emerged on April 4 at Cornelia.

Indiana J. J. Davis (April 27): The codling moth is scarce in northern Indiana and moderately abundant in the southern part of the State.

Illinois W. P. Flint (April 22): The codling moth is moderately abundant.

Idaho C. Wakeland (April 22): The codling moth in southwestern Idaho is very abundant. Very light mortality, but the season is late.

Missouri L. Haseman (April 24): Scarce at Waverly, and moderately abundant at Columbia and Marionville; 33 1/3 per cent were in the pupal stage April 20 at Waverly.

Washington R. L. Webster (April 2): Students in class in Fruit Insects find heavy mortality among larvae of the codling moth in orchards about Pullman.

EASTERN TENT CATERPILLAR (Malacosoma americana Fab.)

Connecticut M. P. Zappe (April 26): Very few nests have been sent in from over the western half of the State. Very much less in abundance, compared with the average year.

Massachusetts A. I. Bourne (April 22): Tent caterpillars were noted to be hatching April 7 to 9. They appear to be slightly less abundant throughout the State as a whole than last year. It is possible, therefore, that the wave of abundance which we have encountered for the last several years has at last begun to subside.

New York P. J. Parrott (April 20): Moderately abundant in the Geneva section of New York.

New Jersey T. J. Headlee (April 22): The eastern tent caterpillar is moderately abundant.

Virginia P. J. Chapman (April 22): Very abundant in Virginia.

North Carolina R. W. Leiby (April 19): The tent caterpillar appears to be more common than in five or six years. The larvae are about ready to pupate. Some defoliation in orchards has been observed, this being unusual.

W. A. Thomas (March 15): This insect has just recently hatched and the larvae have formed small tents in more than 50 per cent of the wild cherry trees in this locality, Chadbourn.

Mississippi R. W. Harned (April 22): Specimens of Malacosoma americana were found to be abundant on wild plum trees at Benton.

SPRING CANKER WORM (Paleacrita vernata Peck)

Missouri L. Haseman (April 24): This pest has not developed in as great abundance as expected earlier.

FRUIT TREE LEAF ROLLER (Archips argyrospila Walk.)

Idaho C. Wakeland (April 22): Fruit tree leaf rollers moderately abundant at Twin Falls. In southwestern part of State scarce where there was a very light mortality of eggs.

RESPLENDENT SHIELD BEARER (Coptodisca splendoriferella Clem.)
RIBBED COCOON MAKER (Bucculatrix pomifoliella Clem.)

Massachusetts A. I. Bourne (April 23): Prof. Whitcomb notes the finding of a considerable collection of overwintering cocoons of the resplendent shield bearer and the ribbed cocoon maker in an orchard in Middlesex County. He reports that on many of the branches the cocoons were only about 1 inch apart, and certainly would average about 10 to the foot.

LEAF CRUMPLER (Mineola indigenella Zell.)

Missouri L. Haseman (April 24): Overwintering larvae unusually abundant on young fruit trees and on Crataegus.

BUFFALO TREEHOPPER (Ceresa bubalus Fab.)

Nebraska M. H. Swenk (January 1 - April 15): Apple twigs badly scarred by the egg punctures of the buffalo treehopper were received from Platte County on March 27 and from Douglas County on April 8.

LEAFHOPPERS (Cicadellidae)

Virginia P. J. Chapman (April 22): Apple leafhoppers are scarce in eastern Virginia.

Illinois W. P. Flint (April 22): Apple leafhoppers are very abundant.

Kentucky H. Garman (April): Apple leafhoppers are moderately abundant.

APPLE TWIG BORER (Amphicerus bicaudatus Say)

Nebraska M. H. Swenk (January 1 - April 15): The first report of the grape cane borer (Schistocerus hamatus Fab.) for 1929 was received from Douglas County on April 6.

EUROPEAN RED MITE (Paratetranychus pilosus C. & F.)

Connecticut P. Garman (April 24): Eggs have not yet hatched in orchards observed in New Haven County. They are found in the usual abundance.

Massachusetts A. I. Bourne (April 22): From the evidence of overwintering eggs the infestation of the European red mite over the State as a whole may be said to be normal. It is, however, very "spotty" this year, rather more so than has been noted for several years. It has been observed to be very heavy in many orchards, while in others, such as for example the college orchard (at Amherst), it is very light in most blocks. The infestation in many cases can be directly correlated with the particular oil sprays the growers used a year ago. Some of the worst infested

orchards this spring are those in which the grower made a poor choice of oils for control in 1928. As a result of this, many growers are making a change in their selection of oil sprays for 1929.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

- Connecticut W. E. Britton (April 23): The San Jose scale is scarce.
- Massachusetts A. I. Bourne (April 22): Professor Whitcomb reports, from the eastern part of the State in Nashoba District, that the San Jose Scale appears to be increasing slightly in abundance, but is not yet at a point where it is at all serious. The San Jose Scale is generally distributed and appears to be about normal in abundance except locally in some orchards where it is abundant.
- Rhode Island A. E. Stene (April 20): The San Jose scale is not present in many sections and scarce even when found.
- New York C. R. Crosby (April 22): The San Jose scale is scarce.
P. J. Parrott (April 20): Scarce in the Geneva section of New York.
- New Jersey T. J. Headlee (April 22): The San Jose scale is scarce.
- Pennsylvania T. L. Guyton (April 22): The San Jose scale is moderately abundant at Harrisburg.
- Delaware H. L. Dozier (April 20): The San Jose Scale is scarce.
- Virginia P. J. Chapman (April 22): This insect is moderately abundant in home orchards in eastern Virginia.
- South Carolina M. H. Brunson (April 20): The San Jose scale is moderately abundant.
- Georgia M. S. Yeomans (April 22): The San Jose scale is moderately abundant throughout the State, attacking various hosts.
- Illinois W. P. Flint (April 22): The San Jose scale is moderately abundant. (April 16): This scale is starting to grow rapidly and a survival of 40-45 per cent occurred in southern and 30-37 per cent in western Illinois.
- Kentucky H. Garman (April): The San Jose scale is moderately abundant.
- Missouri L. Haseman (April 24): Scarce throughout the State.
- Idaho C. Wakeland (April 22): This insect is moderately abundant in southwestern Idaho. About 25 per cent mortality.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

- Illinois W. P. Flint (April 16): Observations in central Illinois indicate a decrease in parasitism of this scale and a larger winter survival of eggs than has been the case for the last two seasons. (April 22): The oyster-shell scale is very abundant in the northern three-fourths of the State.
- Kentucky H. Garman (April): The oyster-shell scale is scarce.
- Missouri L. Haseman (April 24): Scarce in Missouri.
- Nebraska M. H. Swenk (January 1 - April 15): The oyster-shell scale on apple was complained of during the period here covered.

PEAR

PEAR PSYLLA (Psyllia pyricola Foerst.)

- Massachusetts A. I. Bourne (April 22): Another reflection of the abnormally high temperatures was noted in the development of pear psyllas. The adults came out of hibernation much earlier than they did the year before. About the last of March numerous psyllas could be found, and eggs were noted during the warm period of April 6 and 9. This rather complicates our program of oil sprays just as the buds are swelling and about to break, since many eggs will already have been deposited.
- Connecticut P. Garman (April 24): Eggs are more abundant than last year in New Haven County.

PEACH

PEACH BORER (Aegeria exitiosa Say)

- New York P. J. Parrott (April 20): Moderately abundant in the Geneva section of New York.
- New Jersey T. J. Headlee (April 22): The peach borer is scarce.
- South Carolina M. H. Brunson (April 20): The peach borer is moderately abundant.
- Georgia O. I. Snapp (April 22): Some one, two, and three year old peach trees at Fort Valley have died as a result of paradichlorobenzene applied last fall for experimental purposes.
- M. S. Yeomans (April 22): The peach borer is moderately abundant.
- Kentucky H. Garman (April): The peach borer is very abundant.

Missouri L. Haseman (April 24): At Columbia the peach borer is scarce. Not serious in State.

LESSER PEACH BORER (Aegeria pictipes G. & R.)

Georgia O. I. Snapp (April 22): The infestation is heavy in orchards at Fort Valley, with many mechanical injuries on trees. Adults have been emerging during the past month.

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Connecticut W. E. Britton (April 23): Very abundant at Hamden.

Delaware H. L. Dozier (April 20): Large numbers of the plum curculio have issued from winter quarters in all parts of the State. (April 10): The unusually early spring has brought the plum curculio from winter quarters at Camden. The first adult was beaten from plum on April 4 and is now abundant on peach and plums.

North Carolina R. W. Leiby (April 19): The curculio appears to be more numerous in the commercial Sandhill peach section than in any year since 1921. As many as 52 overwintered adults have been shaken from one tree. The average around the edges of heavily infested orchards is 15 per tree. Heavy damage can be expected.

C. H. Brannon (April 19): The plum curculio is very abundant at Raleigh.

South Carolina M. H. Brunson (April 20): The plum curculio is very abundant at Clemson College. Adults may be found in large numbers in practically all orchards. (April 2): Plum curculio was found in large numbers in orchards in the Sand Hill section at Columbia on this date. (April 11): The plum curculio was found in large numbers in the College orchard on April 2.

Georgia M. S. Yeomans (April 22): The plum curculio is very abundant on peaches at Albany and Americus.

O. I. Snapp (April 22): The curculio infestation in the Georgia peach belt is the heaviest since 1921. The situation is alarming and a suppression campaign is being waged in an effort to control the second generation. Many growers started rather late with the campaign, not realizing the extent of the infestation early in the season. A heavy infestation was anticipated on account of the leaving of many wormy peaches in the orchard last summer, and because of the mild winter. As many as 25 adults have been collected from a single tree. Peach "drops" show at least a 50 per cent infestation. Larvae are now leaving the "drops" and we are expecting second-brood larvae about the middle of June.

Illinois W. P. Flint (April 16): Mr. Chandler jarred the first plum curculio from peach in southern Illinois at Carbondale on April 6.

Missouri L. Haseman (April 24): This insect is moderately abundant at Columbia. We expect first signs of work by May 1.

Mississippi A SCARABAEID (Hoplia trivialis Harold)

Mississippi B. W. Harned (April 28): On March 8 a correspondent at Ruth sent specimens of Hoplia trivialis Harold that were found on a young peach tree. The specimens were determined by Dr. E. A. Chapin.

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

New York P. J. Parrott (April 20): Absent in the Geneva section of this State.

Delaware H. L. Dozier (April 20): Adults of the oriental fruit moth are issuing in moderate abundance. (April 10): Oriental fruit moths started to issue on April 4 in the large screened central observation cage at the Entomological Substation. These adults came from apple drops collected after harvesting of the late apples, and wintered over under normal outdoor conditions. This is nearly three weeks ahead of the normal emergence for the past four years observed.

Virginia W. J. Schoene (April 20): L. R. Cagle reports that in the vicinity of Roanoke the adult moths of the oriental fruit moth have been out for some time. First-brood larvae were found on April 19.

South Carolina M. H. Brunson (April 20): The oriental fruit moth is generally scarce, but several small infested areas have been observed in the State. A new infestation has just been recorded.

Georgia M. S. Yeomans (April 22): The oriental fruit moth is moderately abundant on peaches.

O. I. Snapp and H. S. Swingle (April 4): The first twig injury was noted today. This is three weeks earlier than the first injury last year. The dates of the first twig injury in past years are: April 25, 1928, April 1, 1927, April 20, 1926; April 10, 1925. Life-history studies showed seven generations in 1925 and six in 1926.

Indiana J. J. Davis (April 26): In company with Porter and Sazama, I observed adults of this insect in a peach orchard at Vincennes on April 3. Sazama observed the first adults several days before. (April 27): The oriental fruit moth is very abundant in two tiers of southern counties.

Illinois W. P. Flint (April 16): From Mr. Chandler's observations made in hibernation cages kept under natural conditions in peach orchards in southern Illinois, the first emergence of the oriental

fruit moth started on April 5, when one moth, the larvae of which had been found in persimmon, emerged. On the 6th and 7th of April very heavy emergence occurred. In fact, judging by the data taken from Mr. Chandler's cages, about 80 per cent emergence took place on these days. The temperature at this time was between 80-85°F. (April 22): Very abundant in extreme southern section only.

Kentucky

H. Garman (April): The oriental fruit moth has recently become moderately abundant in some localities.

Mississippi

R. W. Harned (April 22): Peach twigs showing injury that was evidently caused by the larvae of the oriental peach moth were received on April 8 from Water Valley and Ripley.

OBLIQUE-BANDED LEAF ROLLER (Cacoecia rosaceana Harris)

Mississippi

R. W. Harned (April 22): Specimens of the rose or oblique-banded leaf roller were collected on peach at Ruth on April 12, and on rose at Natchez on April 26. Only slight injury was noticed in each case.

STINK BUGS (Pentatomidae)

Mississippi

R. W. Harned (April 25): Inspector J. P. Kislanko sent specimens of three stink bugs, Nezara viridula L., Euschistus servus Say, and Euschistus tristigmus Say that were collected on April 15 at Wiggins. He states that they are very abundant and are actively puncturing the young peach fruit.

PLUM

RUSTY PLUM APHID (Hysteroneura setariae Thos.)

Missouri

L. Haseman (April 24): The rusty plum aphid is moderately abundant at Columbia.

Mississippi

R. W. Harned (April 22): Aphids identified as Hysteroneura setariae by A. L. Hamner were reported as abundant on plum trees at Laurel and Meridian during the first week of April.

Arizona

O. L. Barnes (April 23): The rusty plum aphid has been very abundant and causing serious injury to a plum tree in Phoenix.

THISTLE APHID (Anuraphis cardui L.)

Idaho

C. Wakeland (April 22): Anuraphis cardui L. is very abundant on prunes in southwestern Idaho.

GOOSEBERRY

HOUGHTON'S GOOSEBERRY APHID (Aphis houghtoniensis Troop.)

Indiana

J. J. Davis (April 26): Gooseberry twigs showing 1928 infesta-

tions of the gooseberry aphid (Aphis houghtonensis) received from Marion and Berne.

GRAPE

GRAPE FLEA BEETLE (Haltica chalybea Ill.)

Delaware

H. L. Dozier (April 10): The grapevine flea beetle has just issued in numbers from winter quarters in Centerville and is feeding on young grape shoots.

Mississippi

R. W. Harned (April 24): Coleopterous larvae feeding on the upper surface of grape leaves were sent to us from Meridian on April 22. These insects have been identified tentatively by J. M. Langston as larvae of the grape flea-beetle.

BLACKBERRY

ROSE SCALE (Aulacaspis rosae Bouche')

New Mexico

J. R. Eyer (April 27): At Farmington this scale is very abundant and injurious to blackberry.

PECAN

AN APHID (Myzocallis fumipenellus Fitch)

Georgia

T. L. Bissell (March 27): First stem mother on pecan at Experiment. (April 1): Adults on hickory. (April 9): Numerous adults on pecan. (April 26): Adults numerous on pecan; young less abundant; characteristic injury of this aphid as yet unobserved this year on either pecan or hickory.

Alabama

R. W. Harned (April 22): On April 13, H. P. Loding, of Mobile, Alabama, wrote as follows: "The pecan aphid, Myzocallis fumipenellus Fitch, made its appearance this year the first part of April, adults and young.

Mississippi

R. W. Harned (April 19): On this date J. P. Kislanko wrote as follows: "The first pecan aphids were observed in the vicinity of Wiggins on April 10. The black and lemon colored aphids were collected on this day. The migrants of both forms have been collected every day since then."

APHIDS (Monellia sp.)

Georgia

T. L. Bissell (April 26): Adults and young of Monellia costalis F. and a new species of Monellia are abundant on pecan at Experiment.

PECAN BUDMOTH (Proteopteryx bolliana Sling.)

Georgia

M. S. Yeomans (April 22): The budmoth Proteopteryx bolliana

Sling., is rather abundant in pecan orchards and nurseries of this section (Albany).

Mississippi

R. W. Harned (April 22): Injury to pecan trees by the pecan bud moth was reported from Ruth on April 12.

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Mississippi

R. W. Harned (April 24): W. L. Gray, Inspector for the State Plant Board at Natchez, reports that pecan trees defoliated in the fall of 1928 by the walnut caterpillar have very few catkins, and the indications are that there will be an extremely light crop of pecans in that section of the State. It is thought that this is due to the defoliation by walnut caterpillars last year.

PECAN LEAF CASE BEARER (Acrobasis nebullella Riley)

Georgia

M. S. Yeomans (April 22): The pecan leaf case bearer, Acrobasis nebullella, is showing up badly in untreated pecan orchards in Albany and vicinity. Where spraying and dusting were properly carried out late summer, especially during August and September, the insect has been satisfactorily controlled.

A SCARABAEID (Diplotaxis excavata Lec.)

Georgia

M. S. Yeomans (April 22): Adults of Diplotaxis excavata Lec. were found feeding quite extensively on opening pecan buds and really doing serious damage in some orchards.

A SCARABAEID (Anomala undulata Melsh.)

Mississippi

R. W. Harned (April 22): Beetles identified by J. M. Langston as Anomala undulata were observed as very abundant around Schley pecan trees at Lucedale on April 4.

HICKORY SHOOT CURCULIO (Conotrachelus aratus Germ.)

Mississippi

R. W. Harned (April 25): Inspector N. D. Peets collected on April 18 specimens of the hickory shoot curculio on pecan trees at Ruth. He sent in a number of larvae in the twigs and also two adult weevils. He reported that 75 per cent of the twigs on these particular pecan trees were damaged by this insect. (April 26): Inspector J. P. Kisilanko, at Wiggins, on March 24, sent in specimens of Conotrachelus aratus Germ. (determination verified by E. A. Chapin). He wrote that the females were ovipositing in petioles of hickory leaves and that the adult weevils were numerous at that time.

HICKORY BARK BEETLE (Scolytus quadrispinosus Say)

Mississippi

R. W. Harned (April 25): Inspector N. D. Peets, Brookhaven,

sent in one bark beetle that J. M. Langston identified as probably the hickory bark beetle, Eccoptogaster quadrispinosus that was collected on pecan at Ruth, Rankin County, on April 18. No injury was reported and only one specimen was sent in, but this is of special interest because of the possibility that the hickory bark beetle might become a serious menace to pecan trees.

FIG

CITRUS MEALYBUG (Pseudococcus citri Risso)

Louisiana

A. W. Gressman (April 4): This insect is appearing in numbers on figs, Ficus carica, in New Orleans. The crop loss each year from this insect is estimated at from 20 per cent in years of light attack to 75 per cent in years of very heavy infestation.

CITRUS

MEDITERRANEAN FRUIT FLY (Ceratitis capitata Wied.)

Florida

Plant Quarantine and Control Administration (April 30): The Mediterranean fruit fly, an extremely destructive pest in many tropical and subtropical countries where it causes an enormous damage by its attack on a wide variety of hosts, both fruit and vegetables, was discovered at Orlando, Florida, on April 6. On April 15 the State Plant Board of Florida after a preliminary survey promulgated a quarantine covering all of Orange and Seminole Counties and part of Lake County, to include all the districts then known to be infested by this pest.

Subsequent and more intensive surveys carried on up to May 1 have led to the discovery of the fruit fly at the following points: Daytona Beach, Holly Hill, De Leon Springs, DeLand, Oak Hill, in Volusia County; Eustis in Lake County; Narcoossee in Osceola County and Titusville and Ococha in Brevard County. A single infested fruit was found on a cull-dump at Haines City in Polk County and a few infested Florida fruits were taken from truck shipments at Miami, Florida, Ocilla, Georgia, and in Louisiana.

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

South Carolina M. H. Brunson (April 20): The citrus whitefly is scarce.

Georgia M. S. Yeomans (April 22): Adults of the citrus whitefly were seen on the wing April 20, various plants infested.

APHIDS (Aphididae)

Arizona

O. L. Barnes (April 23): On April 2, 15, and 23, Aphis medicaginis Koch and Myzus persicae Sulz were found on the new and tender foliage of young citrus trees in several groves north and northeast of Phoenix. The tender foliage on older trees was infected to some extent also. The insects were very numerous on some trees.

CITRUS APHID (Aphis spiraeicola Patch)

Mississippi

K. L. Cockerham (April 11): On this date citrus aphids were found on satsuma oranges delivered to Biloxi.

CITROPHILUS MEALYBUG (Pseudococcus gahani Green)

California

Monthly News Letter Los Angeles County Horticultural Commission Volume 11, No. 4, April 15: A preliminary report of inspections completed to date in the annual spring survey of all citrophilus mealybug infested citrus orchards of record in Los Angeles County indicates very little change from the seasonal average of the past five years. Reports made to H. M. Armitage by the various district horticultural inspections, indicate a slight increase in light and medium infestations with a corresponding decrease in heavy infestations.

An attempt is being made to eradicate an infestation at the Van Nuys School at Van Nuys. The eradication program to date has consisted of the removal of 29 trees from six different areas in the school grounds. An attempt is also being made to control the mealybug infestation in the shrubbery at the Torrance High School.

COTTONY-CUSHION SCALE (Icerya purchasi Mask.)

South Carolina

M. H. Brunson (April 11): The cottony-cushion scale on rose was sent to the department from Estill April 7.

Georgia

M. S. Yeomans (April 22): The cottony-cushion scale has been showing up again in the Albany section. Australian ladybeetles will likely put the scale infestation in bounds.

Florida

E. W. Berger (March 28): The cottony-cushion scale is abundant about Gainesville at this time, about 15 separate infestations exist. Numerous infestations are also being reported for other parts of the State. While most of these infestations are on citrus others are on Pittosporum, roses and other plants. In the past month about 100 colonies of the Vedalia, or Australian Ladybeetles, have been furnished to growers for the control of the cottony-cushion scale, and not an instance is known where the beetles have failed to control it.

It is something of an open question why this scale has increased so abundantly during the winter and early spring, which is rather unusual, although there is some increase each year during the period indicated. There has been some indication that the Vedalia were decimated during the last summer and fall by some disease, which may, of course, be the correct explanation. On the other hand, our rather continuous cool weather may be responsible for having checked the activities of the Vedalia but allowing the scale to increase.

PURPLE SCALE (Lepidosaphes beckii Newm.)

Georgia

M. S. Yeomans (April 22): The purple scale is moderately abundant on Satsuma oranges in southern Georgia.

TRUCK - CROP INSECTS

VEGETABLE WEEVIL (Listroderes obliquus Gyll.)

Mississippi

R. W. Harned (April 22): Throughout the month of April the vegetable weevil has been very abundant in the southern half of the State. Tomatoes, turnips, mustard, cabbage, carrots, and strawberries have been injured. Specimens have been received from Pike, Copiah, Lincoln, Hinds, Amite, George, Rankin, Scott, and Wilkinson Counties. (April 24): On April 22 a correspondent at Mechanicsburg, Yazoo County, sent in some adult vegetable weevils with the following comments: "They are literally destroying my garden. Tomatoes are destroyed over night. Mustard, radishes, etc., are destroyed almost as fast as they come out of the ground."

M. M. High (March 26): The vegetable weevil had, during the past two weeks, destroyed several plantings of turnips and carrots at Gulfport before the growers discovered the pest or knew what insect was responsible for the injury.

H. H. Kimball (March 23): Two acres of carrots on property 4 miles northwest of Crystal Springs was found to be heavily infested with the vegetable weevil. Larvae were very abundant, but no pupae or adults were observed. The field was planted in October, 1928, and the loss is estimated at 30 per cent of the crop.

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

New York

P. J. Parrot (April 20): This insect is scarce around Geneva.

Virginia

P. J. Chapman (April 8): Adults of this insect are commonly found feeding on willow pollen in several localities near Norfolk. (April 22): The striped cucumber beetle is scarce in eastern Virginia.

South Carolina

M. H. Brunson (April 20): The striped cucumber beetle is moderately abundant in the southern and eastern part of the State.

Illinois

W. P. Flint (April 23): This insect is moderately abundant.

Kentucky

H. Gorman (April): The striped cucumber beetle is very abundant.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Virginia

P. J. Chapman (April 20): Diabrotica 12-punctata was feeding on beans the last of March in Princess Anne County.

North Carolina

C. H. Brannon (April 19): The spotted cucumber beetle is

generally distributed over the whole State, attacking lettuce, beans, and other crops.

South Carolina F. Sherman (March 27): Adults were taken in flight at Clemson College as early as March 11 and living adults in considerable numbers were sent from an eastern county on February 23.

M. H. Brunson (April 20): The spotted cucumber beetle is moderately abundant.

Georgia M. S. Yeomans (April 22): This insect is moderately abundant.

Florida F. S. Chamberlin (April 8): Adults of this insect are very abundant in Gadsden County on truck crops, especially beans and cucumbers, and a slight infestation has been found on tobacco.

Mississippi R. W. Harned (April 22): Adult specimens were collected on snap beans at Carriere March 28, but little or no injury had been caused. Larvae of this species were reported as seriously injuring the crown and roots of young corn at Overt April 18.

A MOLE CRICKET (Scapteriscus acletus R. & H.)

Mississippi W. H. High (March 24): This mole cricket continues to be numerous in several localities near Gulfport and Lyman, where it attacks various truck crops, as cabbage, lettuce, etc.

R. W. Harned (April 25): On April 24 a correspondent at Piave, Green County, sent in some specimens determined by J.M. Langston as Scapteriscus acletus, with the following comments: "The habits of these insects so far as I can determine are similar to that of a mole, ^{as} they burrow and make miniature mounds while travelling up and down the drill where the seed are planted."

NORTHERN MOLE CRICKET (Gryllotalpa hexadactyla Perty)

Indiana J. J. Davis (April 26): A mole cricket (Gryllotalpa borealis) was reported as abundant and attacking tomato seed in soil at Greencastle April 20.

TARNISHED PLANT BUG (Lygus pratensis L.)

Missouri L. Hasemen (April 24): Overwintering adults have been active during April on apple blossoms, and injury to strawberry blossoms has been reported.

Utah G. F. Knowlton (April 10): The tarnished plant bug was found around the margins of last year's sugar-beet fields at Brigham City and Willard. This insect was very abundant on alfalfa and rather numerous on sugar beets during the summer of 1928.

CRANE FLIES (Tipulidae)

Indiana

J. J. Davis (April 26): Leatherjacket larvae (Tipulidae) were sent in from English March 20, where they were reported very abundant in a timothy field, although no damage was noticed at the time.

GARDEN SLUG (Agriolimax agrestis L.)

North Carolina

W. A. Thomas (March 30): This pest has been unusually abundant in this section (Chadbourn) during the past few weeks. To-day they were observed feeding on broccoli foliage as high as 6 to 8 inches above the soil. On spinach only the lower leaves were injured. The outbreak is undoubtedly due to the very wet weather of the past month. (April 22): The garden snails have begun to eat small holes in ripe strawberries in the fields. The attacks have not yet reached a serious stage but they are seen frequently on the berries, especially in heavy foliage where the fruit is shaded.

SOWBUGS (Oniscidae)

Mississippi

K. L. Cockerham (April 7): For several weeks the pillbugs have been numerous and causing damage to garden truck such as turnips, radishes, and beans, and to flowers in the yard.

MILLIPEDES (Myriapoda)

Indiana

J. J. Davis (April 26): Millipedes have been reported damaging plants in several localities. From Berne, April 16, is the report that they are abundant in the garden and that tomatoes and strawberries lying on the ground were eaten last year. From Jasper we have a report of March 13 that they are eating the roots of vegetable, flower garden and hotbed plants, and it is specifically stated that they eat the roots of young tomatoes and lettuce plants. From Huntington comes the report April 24 that these animals are eating the roots of various garden plants.

POTATO AND TOMATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

Virginia

P. J. Chapman (April 11): Eggplants in cold frames have been injured by adults in a number of instances near Norfolk. One grower hand-picked an average of 2 or 3 insects to a plant in some beds. (April 22): This insect has become moderately abundant in eastern Virginia.

G. E. Gould (April 19): The first adults were found on potatoes on April 4, the first eggs found April 9, and the first

larvae emerged on April 19. The beetles appear to be quite numerous at the present time.

- North Carolina W. A. Thomas (April 15): This insect is now active in about the usual abundance on potatoes at Chadbourn. The first eggs have hatched and the larvae are doing considerable damage in some fields.
- South Carolina M. H. Brunson (April 11): The Colorado potato beetle was first noticed on potato on April 3 at Clemson College. (April 30): The insect is moderately abundant; field activity has just started.
- Georgia M. S. Yeomans (April 22): This insect is moderately abundant.
- Florida E. W. Berger (April 4): I am advised by our county demonstration agent, F. L. Craft, that the Colorado potato beetle is causing some trouble in the Irish potato plantings of Alachua County but is being controlled by arsenicals. In one instance in a field that was planted to potatoes last year, they are in tomato plants. It is also reported to be present in the potato sections of Hastings.
- Illinois W. P. Flint (April 22): The Colorado potato beetle is moderately abundant.
- Kentucky H. Garman (April): The Colorado potato beetle is very abundant.
- Alabama K. L. Cockerham (April 1): Adults and larvae were found on tomato plants in a bed near Theodore on April 1; egg batches were also quite numerous.
- Mississippi H. H. Kimball (March 25): A Colorado potato beetle was found on a volunteer potato plant in a cabbage patch near Crystal Springs.
- P. K. Harrison (April 5): Adults and eggs were observed in several fields of Irish potatoes near Picayune.

GREEN PEACH APHID (Myzus persicae Sulz.)

- Mississippi R. W. Harned (April 25): Inspector Chesley Hines, Yazoo City, sent in some aphids on April 20 that were collected on Irish potatoes. These were determined as Myzus persicae. Mr. Hines reported that the bottom leaves of the potato plants were turning yellow because of the injury. The owner had about one week previously dusted the plants with calcium arsenate to control the Colorado potato beetle.

POTATO LEAFHOPPER (Empoasca fabae Harr.)

- Illinois W. P. Flint (April 22): This insect is moderately abundant.

- Kentucky H. Garman (April): This insect is very abundant.
- SOUTHERN GREEN STINK BUG (Nezara viridula L.)
- Florida F. S. Chamberlin (March 28): This insect is very numerous for this season of the year. Fields of Irish potatoes in Gadsden County show a considerable amount of foliage damage.
- GREEN PEACH APHID (Myzus persicae Sulz.)
- Virginia G. E. Gould (April 18): The spinach aphid (Myzus persicae) is more common on potato in Princess Anne County than the potato aphid, there being usually 2 or 3 adults on a plant.

EGGPLANT

EGGPLANT FLEA BEETLE (Epitrix fuscula Crotch)

- Mississippi R. W. Harned (April 25): On April 15 a correspondent at Fayette reported that tiny black insects were eating the leaves off eggplants and killing them. Later when some of these insects were sent in they proved to be flea beetles, probably Epitrix sp. (Determined by T. M. Langston.)

CABBAGE

IMPORTED CABBAGE WORM (Pieris rapae L.)

- South Carolina F. Sherman (March 27): The imported cabbage butterfly appeared to be on the wing at Clemson College about March 11 and has been quite common since that time, more abundant than usual I believe.
- Ohio N. F. Howard (April 26): An adult of Pontia rapae was observed in flight at Columbus on April 6.
- Kentucky H. German (April): This insect is very abundant.
- Missouri L. Haseman (April 24): This insect is moderately abundant, butterflies having been seen since the first week in April.
- Mississippi R. W. Harned (April 22): Cabbage at Durant was reported as being seriously injured by the common cabbage worm April 8.
- HARLEQUIN BUG (Murgantia histrionica Hahn)
- Delaware H. L. Dozier (April 10): Specimens of the harlequin bug were received from Laurel March 25 with the report that they were seriously injuring all kinds of greens, especially cabbage, and were then attacking peas and beans.

Virginia

F. J. Chapman and L. J. Brannon (April 18): A field of collards at Lynnhaven Inlet, Princess Anne County, which was badly infested last fall was examined March 22 and two adults were found in hibernation. On March 29 adults were numerous in small areas in the field. The first eggs were found April 1 and by April 11 eggs were common.

North Carolina

J. A. Thomas (April 10): The harlequin bug has developed an unusually heavy infestation near Chadbourn this spring on seedling broccoli, where thousands may be seen feeding on flowers and young seed-pods. On many plants the seed-pods have died without forming seed owing to attacks of this insect. Heading cabbage adjacent to heavily infested broccoli is, at least temporarily, immune from attacks.

C. H. Brannon (April 19): This insect is very abundant.

South Carolina

M. F. Brunson (March 31): This insect is causing much damage to cabbage in many parts of the State. (April 20): The harlequin bug is very abundant.

Mississippi

H. H. Kimball (March 25): The harlequin bug is very numerous in a spot approximately 30 ft. square in a 2-acre field of cabbage on property 3 miles northwest of Crystal Springs. There were over 40 bugs on one plant, 20 of these observed mating.

R. A. Harned (April 22): Complaints in regard to the harlequin bug have been received from all sections of the State. Specimens have recently been received from Mahalak, Columbus, Jackson, and Greenwood. Turnips, lettuce, collards, cabbage, and rape have been seriously injured.

Texas

F. L. Thomas (April 23): The correspondent who is a truck grower of long experience called this insect a new pest of cabbage and wrote that he needed quick relief. The report was from Tinsboro, Hood County.

DIAMOND-BACK NOTE (Plutella maculipennis Curt.)

Arizona

C. L. Barnes (March 15): These insects were rather abundant in one cabbage field near Phoenix, where some injury was done.

STRAWBERRY

STRAWBERRY ROOT APHID (Aphis forbesi Weed)

North Carolina

J. A. Thomas (April 16): This insect has just begun to infest the tender buds and leaves of strawberry plants but is more numerous than at this time last year at Chadbourn. It is attacking principally the young leaves before they begin to unfold.

Mississippi

R. W. Harned (April 22): Although specimens of the strawberry root louse have been received from only two places, Durant and Tribbett, during the month of April, many other complaints from all sections of the State have been received.

STRAWBERRY CROWN BORER (Tyloderma fragariae Riley)

Missouri

L. Haseman (April 23): Our most important strawberry pest, the strawberry crown borer, is just beginning to oviposit.

STRAWBERRY ROOT WORM (Paria canella Fab.)

North Carolina

W. A. Thomas (March 30): This insect began leaving hibernation the second week in March and the movement has gradually increased until the edges of strawberry fields are rather heavily infested. The foliage is already showing numerous holes. This movement may presage heavy damage to the crop in midsummer. (Chadbourn.)

GREEN JUNE BEETLE (Cotinis nitida L.)

Mississippi

R. W. Harned (April 22): Larvae of Cotinis nitida were found injuring roots of strawberry plants at Brookhaven on April 10.

STRAWBERRY FLEA BEETLE (Haltica ignita Ill.)

Mississippi

R. W. Harned (April 22): The strawberry flea beetle was reported as causing injury to strawberry plants at Summit, April 17.

STRAWBERRY WEEVIL (Anthonomus signatus Say)

North Carolina

W. A. Thomas (March 27): This weevil began emerging from hibernation March 14 and by the 25th oviposition was extremely heavy in the strawberry buds. At this date the berry growers are experiencing the heaviest weevil infestation in the Chadborn section within the past 10 years. Some fields have already had a loss of nearly one-fourth of the crop.

RED SPIDER (Tetranychus telarius L.)

Mississippi

M. M. High (March 26): The red spider is now abundant on strawberry along the coast and several preparations have been used against the pest.

R. W. Harned (April 22): Red spiders have been reported as causing considerable damage to strawberries near Pascagoula and Ocean Springs during March and April. Control measures are being used.

FIRE ANT (Solenopsis geminata Fab.)

North Carolina J. A. Thomas (April 19): The cornfield ant was observed eating holes in ripe strawberries in a field where the fruit had not been mulched. The berries were partly covered in earth from cultivation. (Chadbourn.)

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

New Jersey T. J. Headlee (April 22): This insect is very abundant in winter quarters in Cape May County.

Virginia P. J. Chapman (April 20): Beans at Norfolk have been up since about March 23 and to date no adults have been taken in the field.

North Carolina R. W. Leiby (April 19): Reports have been received to the effect that some adult beetles have left hibernation and are feeding on beans.

South Carolina W. H. Clark (April 1): Cage activity was first observed on March 15.

M. H. Brunson (April 20): Field activities of the Mexican bean beetle were first noticed at Clemson College April 19. This date is 11 days earlier than that of last year. This insect is scarce.

Georgia M. S. Yeomans (April 22): The Mexican bean beetle is moderately abundant on snap beans in northern Georgia.

Kentucky H. Gorman (April); This insect is very abundant.

Mississippi K. L. Cockerham (April 22): Two specimens of this insect were found at Biloxi today, one on Irish potatoes and the other on snap beans.

BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

Virginia P. J. Chapman (April 1): A few adults were feeding on beans March 28 near Norfolk.

South Carolina M. H. Brunson (April 7): The bean leaf beetle was first noticed feeding on beans at Clemson College on this date. (April 8): This insect has been reported in destructive numbers in the coastal plain section of South Carolina.

W. H. Clark (April 1): Cage activity at Clemson College was first observed March 17.

Georgia M. S. Yeomans (April 22): The bean leaf beetle adults are appearing in great numbers on beans in all southern Georgia.

Mississippi

P. E. Harrison (March 26): This insect is damaging 75 per cent of the beans in several fields near Picayune.

R. L. Harned (April 22): A very heavy infestation of the bean leaf beetle on black-eyed peas was observed by Inspector Henry Dietrich at Lucedale on April 1. Specimens collected on beans were also received from Carriere and McNeill during the month of April.

SEED CORN MAGGOT (Hylemyia cilicrura Rond.)

Virginia

P. J. Chapman (April 17): Beans planted after about April 1 are producing a ragged stand throughout the Norfolk trucking section and much sprouted seed and even plants well above the ground are found infested with the seed corn maggot. Larvae are frequently found in the stalk 1 to 2 inches above the ground. Snap beans planted between March 18 and March 25 are reasonably free from injury. Losses are general on the second sowings and large acreages are likely to be plowed up shortly and new beans sown.

THREE-CORNERED ALFALFA HOPPER (Stictocephala festina Say)

Mississippi

R. W. Harned (April 22): Specimens of the three-cornered alfalfa hopper were collected on snap beans at Carriere March 28. The correspondent did not indicate the extent of injury.

ONION

ONION THRIPS (Thrips tabaci L.)

California

R. E. Cambell (March 25): The onion thrips is present pretty well over the onion acreage of the Coachella Valley, doing the usual amount of damage or perhaps more. Any increase in numbers is likely to cause a considerable loss.

BAR-WINGED ONION FLY (Chaetopsis aenea Wied.)

Mississippi

K. L. Cockerham (April 7): For several days these adults have been quite numerous near Biloxi. So far I have seen no damage, but they are flying around and lighting on the tops of onions and gladioli.

MELONS

WESTERN STRIPED CUCUMBER BEETLE (Diabrotica trivittata Mann.)

Arizona

O. L. Barnes (April 23): On April 5 and 16, the western striped cucumber beetle on cantaloupe was reported. It was doing

very serious injury to young plants in Salt River Valley, and two fields were injured near Phoenix.

SWEET POTATO

SWEET-POTATO FLEA BEETLE (Chaetocnema confinis Crotch)

South Carolina M. H. Brunson (April 9): The sweet-potato flea beetle was first noticed feeding on sweet potato April 9 but only slight damage has been reported so far.

SUGAR BEET

BEET LEAFHOPPER (Eutettix tenellus Baker)

New Mexico J. P. Eyer (April 27): Beet leafhoppers appear in all beet sections of the State and are very abundant. They feed on tomato, tobacco, squash, and Russian thistle also.

Idaho C. Wakeland (April 23): Very severe winter mortality of this insect in the natural breeding areas throughout southern Idaho has produced a scarcity of this insect. In a few localities where low-headed rosettes of wild mustards survived the winter, there are a few centers of fairly heavy populations which may give rise to migrations to cultivated areas on a small scale if favorable weather conditions arise.

Utah G. F. Knowlton (April 2): Three beet leafhoppers were collected in the vicinity of Hyrum April 12.

TURNIP

TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

Arizona O. L. Barnes (April 23): The turnip aphid, Aphis pseudobrassicae, has been plentiful on turnips in and near Phoenix. I observed one small planting of turnips almost completely destroyed by it.

SPINACH

POTATO APHID (Illinoia solanifolii Ashm.)

Virginia G. E. Gould (April 18): Some fields of spinach are moderately heavily infested with the pink and green potato aphid. It is easily the predominant species on this host at present. Most of the individuals are developing wings.

S O U T H E R N F I E L D - C R O P I N S E C T S

COTTON

SALT-MARSH CATERPILLAR (Estigmene acraea Drury)

Texas

F. L. Thomas (April 25): R. D. Balls at Falacios, Matagorda County, reported that a farmer replanted 70 acres of cotton as a result of injury by the salt-marsh caterpillar, presumably Estigmene acraea. Injury to cotton was also noticed in Brazoria County.

TOBACCO

TOBACCO FLEA BEETLE (Epitrix parvula Fab.)

North Carolina

C. H. Brannon (April 19): The tobacco flea beetle is very abundant over the whole State.

South Carolina

M. H. Brunson (April 20): This insect is very scarce.

SLUGS (Mollusca)

South Carolina

F. Sherman (March 27): Slugs have several times been reported damaging tobacco seedlings in plant beds in eastern counties; quite possibly they have increased under our heavy rainfall.

M. H. Brunson (April 1): Slugs were very destructive on tobacco plant beds in northeastern South Carolina during the last half of March.

SUGARCANE

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana

W. E. Haley (April 4): Eggs and first-instar larvae of the sugarcane borer were found today in Lafourche Parish.

SUGARCANE BEETLE (Luetheola rugiceps Lec.)

Louisiana

W. E. Haley (April 5): The sugarcane beetle was found injuring sugarcane in Terrebonne and Lafourche Parishes.

GRAY SUGARCANE MEALYBUG (Pseudococcus boninsis Kuwana)

Mississippi

R. W. Harned (April 22): The first specimens of this sugarcane mealybug that have been recorded from Mississippi were collected late in March by Inspector W. L. Gray on sugarcane growing at Melton. This sugarcane had been shipped into Mississippi from Geismar, Louisiana, and had been distributed to a number of properties, but every reasonable effort will be made to eradicate the pest.

FOREST AND SHADE - TREE INSECTS

BAGWORM (Thyridopteryx ephemeræformis Haw.)

Indiana

J. J. Davis (April 26): Overwintering bags were reported abundant in young apple orchards at Acton and Rockville, also on gooseberry at Brazil.

Illinois

W. P. Flint (April 16): Bagworms are being received from many points in the State. It is undoubtedly slowly increasing, especially in the vicinity of many of the larger cities.

Missouri

L. Haseman (April 24): This insect is not abundant this spring.

Nebraska

M. H. Swenk (January 1-April 15): A Pawnee County correspondent reported the bags of the bagworm as plentiful in his cedar trees on February 19.

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma S. & A.)

Massachusetts

A. I. Bourne (April 22): We have noticed and have had sent to the college numerous egg masses of tussock moths from practically all sections of the State. From these indications it would seem that there is a temporary abundance of these insects.

PERIODICAL CICADA (Tibicina septendecim L.)

Illinois

J. H. Bigger (March 25): The finding of well-grown nymphs at from 12 to 15 inches in depth in timber land near Arnold and in excavations in Jacksonville indicates that Brood III of the periodical cicada will extend well into central Illinois this year.

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus L.)

Michigan

R. H. Pettit (April 12): I have to report the occurrence of Brachyrhinus ovatus, sometimes called the strawberry crown girdler, in epidemic form. The larvae are present in enormous numbers in our forest nursery where they have gnawed the bark from 3-year old seedlings of various evergreens including white pine, Jack pine, red pine, western yellow pine, Norway and white spruce, Japanese larch, and probably some other evergreens. It seems to be the worst on 3-year-old plants, although it is found in smaller numbers on 2-year-old and occasionally on isolated trees of larger size. The damage has been particularly severe and the loss runs up into the thousands in this one nursery. This insect has been found occasionally in this part of the State in the past but never in sufficient numbers to attract much attention, at least not for 30 years. The identification was made by a specialist in the Bureau of Entomology.

APPLE TWIG PRUNER (Hypermallus villosus Fab.)

North Carolina W. A. Thomas (March 21): These insects began emerging from hibernation as indicated by their presence on tanglefoot screens near the woods on the above date, and by the 25th large numbers were being taken from these screens daily. This was in the vicinity of Chadbourn.

ASH

APHIDS (Aphididae)

Arizona O. L. Barnes (April 23): Aphids (species undetermined) have done very serious injury to two ash trees in Phoenix. The trees had been severely pruned and were putting on new tender growth when attacked by the aphids. Practically all the leaves are curled and covered by the insects. Other ash trees in the same row on both sides of the infested trees, but which had not been pruned, were not infested at the time.

ARBORVITAE

AN APHID (Dilachnus thujaefolia Theob.)

Mississippi R. W. Harned (April 22): This insect has been very abundant this spring on arborvitae plants throughout the State.

BOXELDER

BOXELDER BUG (Leptocoris trivittatus Say)

Nebraska M. H. Swenk (January 1-April 15): The boxelder bug was complained of from Dawson, Custer, Nance, Adams, and Jefferson Counties between January 8 and March 28. The complaints were mostly of its invading houses and staining draperies, but the Nance County correspondent complained of injury to tulip bulbs late in March.

CEDAR

DEODAR WEEVIL (Pissodes deodarae Hopk.)

Mississippi R. W. Harned (April 22): Weevils belonging to the genus Pissodes, and probably to the species deodarae, have seriously injured Cedrus deodara plants at a number of places in the State this spring. Specimens have been received from Greenwood, Kosciusko, Durant, and Meridian recently.

SOUTHERN PINE SAWYER (Monochamus titillator Fab.)

Mississippi R. W. Harned (April 25): On April 23 a correspondent at Meridian sent one specimen of the southern pine sawyer with the following comments: "This beetle was found on my Cedrus deodara. It eats the bark of the trees and the sap comes out."

ELM

REDDISH ELM SNOUT BEETLE (Magdalis armicollis Say)

Nebraska M. E. Swenk (January 1-April 15): Injury to elms by the reddish elm snout beetle was found in Boone County March 30 and in Valley County April 4. In both cases the infestations were apparently following infestations by the elm borer.

EUROPEAN ELM SCALE (Gossyparia spuria Modeer)

Nebraska M. H. Swenk (January 1-April 15): The European elm scale, Gossyparia ulmi, was complained of during the period covered by this report, as damaging elms at North Platte.

HICKORY

A PHYLLOXERA (Phylloxera sp.)

Georgia T. L. Bissell (April 19): Adult Phylloxera in myriads laying eggs along the midrib of hickory leaves was reported from Experiment. They were coming from opened galls on stems and petioles. (April 27): Adults on leaves are greatly reduced in numbers and few eggs have hatched.

OAK

GOLDEN OAK SCALE (Asterolecanium variolosum Ratz.)

Connecticut R. B. Friend (April 25): This insect is very abundant on the young oak and chestnut trees near New Haven.

OAK LECANIUM (Lecanium quercifex Fitch)

South Carolina M. H. Brunson (April 22): The oak lecanium is occurring widely over the State on water oak.

PINE

A SAWFLY (Neodiprion dyari Roh.)

North Carolina R. W. Leiby (April 19): This insect was reported from Madison

as defoliating pine trees, probably white pine, and "literally bushels of the worms are to be found in some pine thickets." The larvae are nearly grown.

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

Nebraska M. H. Swenk (January 1-April 15): The usual number of complaints of the pine leaf scale were received during the period here covered. They came from Douglas, Burt, Lancaster, Saline, and Antelope Counties.

Kansas J. W. McColloch (March 21): A Colorado blue spruce at McPherson is heavily infested with the pine leaf scale.

WILLOW

COTTONWOOD LEAF BEETLE (Lina scripta Fab.)

Mississippi R. W. Harned (April 25): Larvae tentatively identified by J. M. Langston as Melasoma scripta were sent in from McComb on April 20, with the information that they were completely defoliating a weeping willow tree.

INSECTS ATTACKING GREENHOUSE
AND ORNAMENTAL PLANTS

RED SPIDER (Tetranychus telarius L.)

Ohio E. W. Mendenhall (April 22): The red spider was found much earlier this year than usual on the outside owing to the early, warm weather. It was noticeable during the month of March in evergreen plantations at Dayton, but on account of the wet, cool days in April it has been retarded. The indications are that when it gets warm and dry again the damage will be severe unless taken in hand.

Arizona O. L. Barnes (March 8): Specimens of the red spider were brought to us on rose bushes and reported as being abundant on a few plants near Phoenix. (April 17): Red spiders were rather numerous on arborvitae and rose plants in Phoenix.

GREENHOUSE SOUBUG (Armadillidium vulgare Latr.)

Nebraska M. H. Swenk (January 1-April 15): A greenhouse in Scotts Bluff County was reported as having an infestation of this pillbug in February.

CITRUS MEALYBUG (Pseudococcus citri Risso)

Nebraska M. H. Swenk (January 1-April 15): Inquiries as to the control

of Pseudococcus citri on rubber plants and fern were received during the winter from Grant and Boyd Counties.

EUROPEAN FRUIT LECANIUM (Lecanium corni Bouche)

Georgia

O. I. Snapp (April 18): This insect is doing considerable damage to ornamentals and shrubbery around homes in Swainsboro. (April 20): A very heavy infestation of this insect on willow at Haddock has been reported.

CANNA

LESSER CANNA LEAF ROLLER (Geshna cannalis Quaint.)

Mississippi

R. W. Harned (April 22): Specimens of the lesser canna leaf roller were received recently from Biloxi and Osyka, with the information that they were seriously injuring cannas. Several other complaints in regard to this insect have been received from the southern half of the State but no specimens accompanied the reports.

CHRYSANTHEMUM

CHRYSANTHEMUM APHID (Macrosiphoniella sanborni Gill.)

Mississippi

R. W. Harned (April 22): Chrysanthemum leaves infested with Macrosiphum sanborni were sent in from Lena March 26.

Arizona

O. L. Barnes (April 23): On April 4, the chrysanthemum aphid was very abundant on chrysanthemums in the vicinity of Phoenix. We have received several complaints of the unsightly appearance of the plants caused by these aphids.

EUONYMUS

EUONYMUS SCALE (Chionaspis euonymi Comst.)

Tennessee

O. I. Snapp (April 16): Very heavy infestations on Euonymus japonica and running euonymus have been reported from Grand Junction.

LILAC

LILAC BORER (Podosesia syringae Harr.)

Indiana

J. J. Davis (April 26): The lilac borer was reported damaging lilac at Salem on April 16.

NARCISSUS

LESSER BULB FLY (Eumerus strigatus Fallen)

Ohio

E. W. Mendenhall (April 19): I find the small narcissus bulb fly in the narcissus at Dayton. Some of the plantations are quite badly infested.

OLEANDER

OLEANDER APHID (Aphis nerii Fons.)

Mississippi

R. W. Harned (April 22): Oleander leaves heavily infested with Aphis nerii were received from McComb April 10. A. L. Hamner identified the specimens.

HEMISPHERICAL SCALE (Saissetia hemisphaerica Targ.)

Nebraska

M. H. Swenk (January 1-April 15): The hemispherical scale on oleander was complained of during the period here covered.

ROSE

POTATO APHID (Illinoia solanifolii Ashm.)

Mississippi

R. W. Harned (April 22): Although specimens of the rose aphid Macrosiphum rosaefolium have been received from only one locality, Okolona, during the month of April, from complaints of lice on roses that we have received at this office, we believe that the infestation is quite general throughout the State.

ROSE APHID (Macrosiphum rosae L.)

Maryland

J. A. Hyslop (April 26): The first stem-mothers of this insect were observed on rose today.

TAXUS

BLACK VINE WEEVIL (Brachyrhinus sulcatus Fab.)

Rhode Island

A. E. Stene (April 20): The black vine weevil has been sent in and reported as abundant on Taxus.

INSECTS ATTACKING MAN AND DOMESTIC ANIMALS

MAN

MOSQUITOES (Culicinae)

Florida

F. C. Bishopp and T. E. McNeel (March 16): Anopheles quadrimaculatus Say and A. crucians Wied. are present at Zellwood in small numbers, A. crucians being the more numerous. Mansonia perturbans Walk., which becomes a serious pest later in the summer, is just beginning to cause annoyance to man.

HOUSE FLY (Musca domestica L.)

Missouri

L. Haseman (April 24): While the house fly is yet scarce, it is beginning to attract attention in the farm houses.

FLEAS (Siphonaptera)

Indiana

J. J. Davis (April 26): During the past month numerous reports of flea infestations were received. In all but one case they were reported infesting barns or other farm buildings. Localities from which reports were received include Attica, Flora, Lebanon, Salem, Shelbyville, and Tipton.

Florida

F. C. Bishopp (March 23): Every dog examined was found to be more or less infested with either dog or cat fleas. Some of the infestations were heavy.

Missouri

L. Haseman (April 24): This pest is apparently beginning its yearly cycle unusually early, as several complaints of serious outbreaks have been reported during April.

BED BUG (Cimex lectularius L.)

Indiana

J. J. Davis (April 26): Information on the control of bed bugs was requested by correspondents at Frankfort, Kokomo, and Russellville during the past month.

Missouri

L. Haseman (April 24): More calls for information on the control of bed bugs have been received this month than is usually the case so early in the year.

BLACK CORSAIR (Melanolestes picipes H. S.)

Indiana

J. J. Davis (April 26): Kissing bugs, probably Melanolestes picipes, were reported April 10 from Freetown with the information that they were troublesome and that their "sting is worse than that of a wasp."

CHIGGER (Trombicula irritans Riley)

Florida F. C. Bishopp (March 15): Chiggers are fairly abundant on the peat lands in the vicinity of Orlando. Definite information as to when they began to appear in the spring was not obtained.

COCKROACHES (Blattidae)

Missouri L. Haseman (April 24): Cockroaches have been unusually abundant during the past two weeks in homes.

ORIENTAL COCKROACH (Blatta orientalis L.)

South Carolina F. Sherman (March 27): The Oriental cockroach is observed to be active at Clemson after a period of quiet during the winter.

CLOVER MITE (Bryobia praetiosa Koch)

Nebraska M. H. Swenk (January 1-April 15): The clover mite was reported invading houses in Dawes County on April 11 and in Lancaster County April 15.

A SAND FLY (Culicoides furens Poey)

Florida F. C. Bishopp (March 22): A few sand flies are present and annoying man. They are reported to have been active during the warm, still periods throughout the winter.

HORSE

HORSE FLIES (Tabanidae)

Florida F. C. Bishopp (March 22): Horse flies, Tabanus americanus Forst., began to appear during the last week but are not yet very numerous. T. lineola Fab. is present in small numbers though causing live stock annoyance. T. atratus Fab. is said to be present nearly the year round but never very abundant. An occasional specimen is seen now.

BUFFALO GNATS (Simuliidae)

Mississippi R. W. Harned (April 22): Buffalo gnats (Eusimulium pecuarum Riley) have been abundant at a number of places. About April 1 specimens were received from Kosciusko with the report that they were causing considerable annoyance in Attala County. On April 4, Inspector Chesley Hines, Yazoo City, sent in specimens and wrote: "They are present in large numbers in the Fugates, Nod, and Big Black River sections of Yazoo County. The gnats first appeared about a week ago but were not in large numbers until the last few days. Three mules have died in this section

since the appearance of the gnats. It is probable that they caused the deaths. I went over into the Delta section of the county for a short distance this afternoon but was unable to find any of these gnats and the planters with whom I talked reported that they had not seen any." On April 5, County Agent C. L. McNeill wired from Canton, Madison County, as follows: "Large numbers of mules dying on account of gnats." On April 13 Inspector F. A. Smith, Senatobia, wrote: "On Tuesday and Wednesday of this week I was in Marks and Lambert, and the buffalo gnats were very abundant and when walking along the streets of those towns one had to keep fighting them constantly. The owners of livestock were using smoke to protect their animals and some mules had feed sacks fastened so as to protect their nostrils. I do not hear of anyone losing any stock from the gnats."

Georgia

Dr. J. M. Sutton (April 19): A herd of 200 cows and some horses were all infested with Simulium jenningsi Malloch at Sylvester. There were from 25 to 35 adults in a space the size of a half dollar, causing raw sores on the breasts and under the fore legs.

CATTLE

HORN FLY (*Haematobia irritans* L.)

Florida.

F. C. Bishopp (March 21): The infestation in different herds and in different localities varied widely. From 5 to 75 horn flies per head were found on one well-kept dairy herd. At Jupiter 5 to 200 per head were found. At Pehokee there were 100 to 5,000 per head causing much annoyance March 22. At Miami there were from 50 to 1,500 per head, and at Homestead from 5 to 50.

SHEEP

SHEEP TICK (*Melophagus ovinus* L.)

Missouri

L. Haseman (April 24): Only a few complaints of the sheep tick have been received during the month.

DOG

BROWN DOG TICK (*Rhipicephalus sanguineus* Latr.)

Florida

F. C. Bishopp (March 15): There are but few dogs at Orlando infested but some have a good many ticks. At Fort Pierce, West Palm Beach, and Miami infestations are general but many dogs have no ticks and others are only lightly infested. The ticks are said to get more abundant during the summer.

AMERICAN DOG TICK (Dermacentor variabilis Say)

Maryland

J.A. Hyslop (April 23): The first seed tick of the season was observed on a child today.

Florida

F. C. Bishopp (March 22): A few specimens of this tick were found on dogs at Miami and also at Sarasota March 24.

POULTRY

PIGEON HIPPOBOSCID (Lynchia maura Bigot)

Florida

F. C. Bishopp and W. W. Yothers (March 18): This pigeon parasite was found in considerable numbers on nearly every bird in a commercial loft at Orlando.

STICKTIGHT FLEA (Echidnophaga gallinacea Westw.)

Florida

F. C. Bishopp (March 15): Sticktight fleas are a pest of some importance in every locality visited and they are said to get worse later in the spring.

HOUSEHOLD AND STORED -

PRODUCT INSECTS

TERMITES (Reticulitermes spp.)

io

E. W. Mendenhall (March 30): I found a large per cent of Lilium giganteum tunneled by Reticulitermes sp.

diana

J.J. Davis (April 26): Termites have been reported destructive to buildings during the past two months from Bentonville, Columbus, Goshen, Indianapolis, LaFayette, South Bend, Tipton, and Vincennes. Mr. Riley observed termites swarming at LaFayette April 24.

linois

W. P. Flint (April 16): During the first week of April a number of reports have come in from the central part of the State concerning damage by termites. In most cases, as frequently happens, the attention of the property owners was called to this by the appearance of the winged swarms of insects.

ssouri

L. Haseman (April 24): K. C. Sullivan reports that termites are more abundant and active than usual.

ansas

J.W. McColloch (April 22): Injury to dwellings has been reported during the last month from Kansas City, Ottawa, Lindsburg, Manhattan, and Bloom. At Fulton they are giving trouble in a lumber yard. At Manhattan damage has occurred in a hotel and

in a store building. (April 23): Flights occurred at Clayton and Kansas City on April 25 and a big flight at Manhattan occurred April 22.

Mississippi

R. W. Harned (April 24): Complaints have been received from many points during the past two months in regard to termites. It is probable that Reticulitermes flavipes Kol. is the species causing the trouble at all places as several lots sent to Washington for determination proved to be of this species.

Texas

F. L. Thomas (April 25): Termites were swarming at College Station April 23. Two complaints from Houston and one from Bay City.

California

Monthly News Letter, Los Angeles County Horticultural Comm., Vol. 11, No. 4, April 15: Mr Flynn has several men doing termite work in the public school buildings of Los Angeles.

ANTS (Formicidae)

South Carolina

F. Sherman (March 27): Ants have been reported as troublesome in houses, gardens, etc., twice recently.

Indiana

J. J. Davis (April 26): During April we received reports of abundance of ants in lawns from Indianapolis, Muncie, and Winchester.

Nebraska

M. H. Svenk (January 1-April 15): Ants of various kinds were complained of during the period covered by this report. Correspondents in Douglas, Lancaster, Gage, and Thayer Counties reported house or lunchroom infestations.

A CARPENTER ANT (Camponotus castaneus americanus Mayr)

Mississippi

R. W. Harned (April 22): Mr. J. P. Kislanko recently sent to this office some ants that have been identified by M. R. Smith as Camponotus castaneus americanus. These ants are of special interest because they are infected with a peculiar fungus known as Cordyceps unilateralis. Mr. Kislanko found several hundreds of these diseased ants attached to the lower side of twigs of a hickory tree about 4 miles from Wiggins. He stated that the live ants of this species were busily attending a soft scale on the hickory.

A CARPENTER ANT (Camponotus caryae rasilis Wheeler)

Mississippi

R. W. Harned (April 22): R. P. Colmer sent in specimens of ants identified by M. R. Smith as Camponotus caryae rasilis which he found emerging from the porch of a house near Moss Point. M. L. Grimes sent in the same species from Meridian with the remark that the owner of the house from which the ants were taken claimed that they were nesting in the woodwork of the house.

FLORIDA HARVESTING ANT (Pogonomyrmex badius Latr.)

Mississippi

R. W. Harned (April 22): A correspondent at Stringer writes as follows: "One of my farmers has a sandy field badly infested with big red ant beds. He says that they cut his little cotton and corn down for 15 or 20 feet away around each bed." No specimens were submitted with the letter but Dr. Smith is quite certain that the species is the Florida harvesting ant. This ant is a close relative of the common agricultural or so-called harvesting ants of our Southwestern States.

ARGENTINE ANT (Iridomyrmex humilis Mayr)

South Carolina

M.H. Brunson (April 11): The Argentine ant has been discovered at Gannev. This is a new infestation. (Identification by Dr. M. R. Smith, A & M. College.)

FIRE ANT (Solenopsis geminata Fab.)

Mississippi

R. W. Harned (April 22): Mr. W. L. Gray writes that a lady living at Natchez reported that fire ants had eaten holes in two silk dresses. On account of the large number of nests on the lawn she stated that she was afraid to allow her small children to play alone because of the vicious stinging habit of these ants.

AN ANT (Formica fusca L.)

Nebraska

M. H. Swenk (January 1-April 15): Formica fusca was found invading residences from out-of-door colonies at Lincoln April 6 and at Omaha April 8.

YELLOW ANT (Lasius interjectus Mayr)

Illinois

W. P. Flint (April 16): Somewhat more than the usual number of reports of spring swarms of this ant appearing in basements have been received. In no cases has any injury to food stuffs or the woodwork of buildings been reported.

Nebraska

M. H. Swenk (January 1-April 15): This ant was found working in decayed wood under the cement floor of a house basement on February 25.

Kansas

J. W. McColloch (April 15): This ant is very abundant in the basement of a house at White Water.

BLACK HOUSE ANT (Monomorium minutum Mayr)

South Carolina

M. H. Brunson (April 1): Numerous complaints have been received where this pest was troublesome in houses.

CIGARETTE BEETLE (Lasioderma serricorne Fab.)

Indiana

J. J. Davis (April 26): The cigarette beetle was received from Mt. Vernon where it was reported infesting overstuffed furniture.

Illinois

W. P. Flint (April 16): Several reports of damage to upholstered furniture by these insects, together with specimens, have come in. For the last two or three years we have received more reports of damage to upholstered furniture by the cigarette beetle than by the clothes moth.

A SILVERFISH (Lepisma domestica Pack.)

Arizona

O. L. Barnes (March 19): This insect is very abundant in bookcases and filing cabinet in a private home in Phoenix. It was also found in large numbers around fireplaces and on the walls.

HOUSE CENTIPEDE (Scutigera forceps Raf.)

Indiana

J. J. Davis (April 26): The house centipede was reported abundant in homes during the past month at Indianapolis, Montezuma, and Peru.

Nebraska

M. H. Swenk (January 1-April 15): The house centipede was reported as a nuisance in the house of a lady living in Washington County, under date of April 5.

WEEVILS (Calendra spp.)

Nebraska

M. H. Swenk (January 1-April 15): Stored wheat has been reported infested with Calendra granaria L. and C. oryzae L. in several instances during the period covered by this report.

YELLOW MEAL WORM (Tenebrio molitor L.)

Nebraska

M. H. Swenk (January 1-April 15): Corn cobs were reported infested with the yellow meal worm by a Pierce County correspondent on February 25 and by a Custer County correspondent on March 1. In both instances the worms crawled from the cobs when they were about to be used for fuel in the warm buildings.

WHITE-MARKED SPIDER BEETLE (Ptinus fur L.)

Iowa

C. N. Ainslie (April 9): A farmer near Sioux City was greatly disturbed by finding myriads of these beetles among the cobs after the corn had been shelled. None appears to have been seen in the corn.

BEAN WEEVIL (Mylabris obtectus Say)

Indiana J. J. Davis (April 26): Bean weevils were reported from Benton and Gaston.

Nebraska M. H. Swenk (January 1-April 15): Correspondents reported the infestation of stored beans with the bean weevil during the period here covered.

DRUG-STORE WEEVIL (Sitodrepa panicea L.)

Nebraska M. H. Swenk (January 1-April 15): A Sarpy County correspondent reported that her red pepper was infested with the drug-store weevil.

FOREIGN GRAIN BEETLE (Cathartus advena Waltl.)

Nebraska M. H. Swenk (January 1-April 15): Stored wheat has been reported infested with this weevil in several instances during the period covered by this report.

FLAT GRAIN BEETLE (Cryptolestes pusillus Schon.)

Nebraska M. H. Swenk (January 1-April 15): Stored wheat has been reported infested with this weevil in several instances during the period here covered.



THE INSECT PEST SURVEY BULLETIN

A periodical review of entomological conditions throughout the United States
issued on the first of each month from March to December, inclusive.

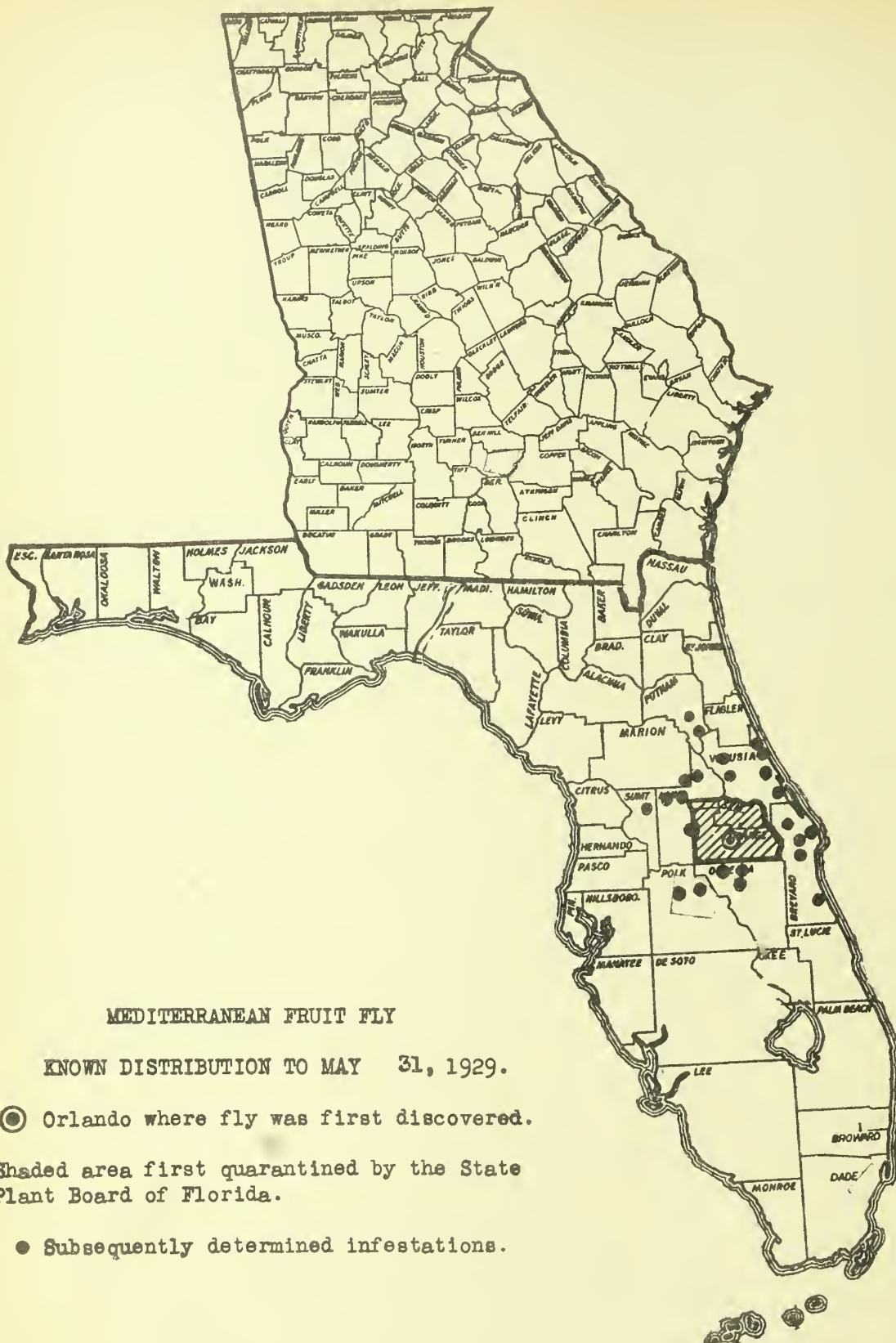
Volume 9

June 1, 1929

Number 4

BUREAU OF ENTOMOLOGY
UNITED STATES
DEPARTMENT OF AGRICULTURE
AND
THE STATE ENTOMOLOGICAL
AGENCIES COOPERATING





INSECT PEST SURVEY BULLETIN

Vol. 9

June 1, 1929

No. 4

OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR MAY, 1929.

During the past month only three additional counties contiguous to the territory recorded in the last number of the Survey Bulletin have been added to the area known to be infested by the Mediterranean fruit fly in Florida. Infested Florida fruit has been intercepted in New York, Ohio, North Carolina, Georgia, Louisiana, Arkansas, and Texas.

The first adult of Brood III of the periodical cicada was recorded from Mt. Pleasant, Iowa, on May 28.

Heavy oviposition by grasshoppers took place last fall in the western part of North Dakota and South Dakota. Although no eggs had hatched by the middle of May, trouble is anticipated in that region.

Wireworm depredations continued to be reported from practically the entire United States. The new species of wireworm Heteroderes laurentii Guer. is appearing in southern Alabama more numerously than during the past several years. Very serious wireworm depredations by Pheletes spp. have been reported from Idaho and California.

Although but little trouble is being reported over the greater part of the Hessian fly territory, southern Illinois and Indiana are experiencing a very severe infestation by this insect. In parts of Illinois 51 per cent of the plants are infested and in Indiana much of the grain acreage is being plowed under.

Reports from the Gulf region of extreme abundance of the corn ear worm this early in the season may lead to unusually heavy infestations farther northward as the season advances.

The fall armyworm is reported quite generally over the Gulf region from Florida to Louisiana in epidemic numbers.

Fruit aphids, in general, are not so abundant as usual, except in Oregon, whence reports of severe infestations have been received.

No change in the normal abundance of the codling moth reported in the last number of the Bulletin has apparently taken place during May.

The San Jose scale conditions throughout the eastern part of the United States are generally quite favorable. Light infestations are being reported over practically all of the Eastern States. In the Pacific Northwest, however, very severe injury is anticipated this year, largely because of unfavorable weather conditions during the dormant spray period.

The heavy plum curculio infestations of the South Atlantic States reported in the last number of the Bulletin have developed to even more serious proportions during the last month. First-generation beetles will probably appear early in June in the Ft. Valley section of Georgia and will undoubtedly do very serious damage to the small crop of fruit which the overwintering weevils left. This serious condition extends from Maryland to Alabama.

The raspberry fruit worm, which has been so seriously injuring loganberries in Washington State, seems more prevalent than heretofore and has even been observed this year destroying strawberry and occasionally injuring the petioles of cherry and apple.

Mole cricket damage is being reported quite generally over the coastal plains region from North Carolina to Florida and in southern Alabama.

The Colorado potato beetle is now being reported in the big potato-growing section about Hastings, Fla., having extended into this territory last year. A rather unusual infestation of asparagus by the adult beetles is reported from Michigan.

A very unusual infestation of strawberry crowns by the larvae of a buprestid, Chrysobothris pubescens Fall, is reported from Washington State. A similar report was received last November from Oregon.

The Mexican bean beetle first appeared in the field in Delaware May 1. Over the newly infested regions of Maryland and Virginia it is appearing in considerable numbers. By the middle of the month it was found in the field in central Ohio.

A very serious disease of beans which makes the growth of the crop practically impossible in Haiti, except at the highest altitudes, has been found to be associated with a small green leafhopper.

The beet leafhopper seems to be at a low ebb of abundance in the Great Basin beet-growing sections. It is reported to be moderately abundant in eastern Oregon and it invaded the Willamette Valley in 1926.

Very serious infestations of aphids on lettuce are reported from the Salinas Valley in California. By the end of April approximately 12,000 acres were seriously infested and a loss of 50 per cent is anticipated.

The satin moth has been found at Olympia, Wash., which is considerably south of the territory hitherto known to be infested in the State.

The European willow beetle, which was first observed in Delaware in the spring of 1922, is now rapidly defoliating the trees in Newark.

The first record of the boxwood leaf miner in the Pacific Northwest was made at Seattle, Wash., on May 18.

Reports of serious annoyance to commercial squab raisers because of infestation of the squabs by the pigeon hippoboscids are reported from South Carolina, Florida, California, and Costa Rica.

GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

North Carolina Z. P. Metcalf (May 27): Grasshoppers are moderately abundant and causing injury to tobacco in Bertie County.

Florida J. R. Watson and E. W. Berger (May 21): Grasshoppers are very abundant over the State, especially in the Everglades. The lubber grasshopper is the worst.

F. S. Chamberlin (May 14): Grasshoppers are unusually abundant in Gadsden County.

North Dakota J. A. Munro (May 16): There was heavy oviposition by Melanoplus bivittatus Say during the past season and serious outbreaks in the western part of the State are predicted if weather remains favorable for their development.

South Dakota H. C. Severin (May 18): We expect trouble from Melanoplus atlantis Riley, M. bivittatus Say, and M. differentialis Thos. in the counties of Lyman, Brule, Jones, Stanley, and Hughes. Eggs are not yet hatched.

Alabama J. M. Robinson (May 23): The lubber grasshopper is very abundant at Uniontown.

Wyoming Harvey L. Sweetman (May 20): Numerous species of grasshoppers are active over the State.

CLEAR-WINGED GRASSHOPPERS (Cannula pellucida Scud.)

Oregon Don C. Mote (April 29): In eastern and southern Oregon this insect and several others are very abundant.

WIREWORMS (Elateridae)

Maine C. R. Phipps (May 21): Melanotus sp. is moderately abundant in the State. Agriotes mancus Say is moderately abundant in the central part of the State.

North Carolina J. N. Tenhet (May 15): A wireworm, Monocrepidius sp., has been doing considerable injury to string beans in the vicinity of Chadbourn.

Z. P. Metcalf (May 27): Wireworms are very abundant in cornfields in the eastern part of the State.

Michigan R. H. Pettit (May 17): Adults are plentiful in parts of the State.

Iowa Carl J. Drake (May 20): Wireworms are abundant, largely in low areas.

Missouri

L. Haseman (May 24): Wireworms throughout Missouri are very abundant. Adults as well as larvae of different species have been observed.

Alabama

J. M. Robinson (May 23): Wireworms in Mobile and Baldwin Counties are very abundant. Corn replanted four times with irregular stand.

Mississippi

R. W. Harned (May 8): Specimens of wireworm mailed from Taylorsville on May 2, with following statement. "I am mailing a worm that I have found eating the bark from young cotton in my field. I have a good deal of damage by this worm."

Oregon

Don C. Mote (April 29): Wireworms are found throughout the State, and are moderately abundant to very abundant. Many species are present.

California

E. O. Essig (May 19): Wireworms are moderately to very abundant in small localities throughout the State.

SAND WIREWORM (Horistonotus uhlerii Horn)

South Carolina

M. H. Brunson (May 18): The sand wireworm is moderately abundant in Hampton and adjoining counties.

J. N. Tenhet (May 24): Injury by this species to corn, cotton, etc., has been very severe and over a larger territory around than ever before. Practically all crops attacked, but corn and cotton injured the worst.

A WIREWORM (Heteroderes laurentii Guer.)

Alabama

K. L. Cockerham (May 21): Field observations in Baldwin County reveal adults of H. laurentii more numerous than at any time during the past several years. Considerable damage to Irish potatoes is reported by O. T. Deen and L. L. Odom. As many as 10 adults could be collected under a single Irish potato vine where the vines had been left lying on the ground after the harvester. Other suitable rubbish also revealed adults hiding beneath it. Indications seem to point to severe damage to the sweet-potato crop in these localities.

A WIREWORM (Pheletes occidentalis Cand.)

Idaho

C. Wakeland (May 21): Wireworms, P. occidentalis, are extraordinarily injurious this season. The late, cool, damp weather has retarded plant growth and brought the germination period of seeds at about the time of greatest wireworm activity. It is too early yet to get many reports of injury to corn and potatoes. Injury to grain crops is more severe than ever before and many wheat fields have been nearly ruined.

SUGAR-BEET WIREWORM (Phelates californicus Mann.)

California

Roy E. Campbell (May 15): Several hundred acres are being treated to control wireworms at Smeltzer, Orange County. Baits planted in $2\frac{1}{2}$ -foot rows are collecting an average of approximately 1 wireworm to the foot of row over the entire area. About the same in abundance compared with an average year; 80 acres of corn averaged 40 per cent damage, 10 acres so severely damaged that replanting was required, 50 acres had 50 per cent damage at Temple (near Alhambra). Baits in a plot 38 by 80 feet left 6 days collected 3,500 wireworms, indicating an excess of 68,000 worms per acre.

WHITE GRUBS (Phyllophaga spp.)

Massachusetts

A. I. Bourne (May 23): At Amherst white grubs were noted first on May 15.

Indiana

J. J. Davis (May 28): Tiphia cocoons (Phyllophaga parasites) were observed as abundant behind the plow at Windfall May 15, indicating abundance of grubs last year and a high degree of parasitism.

Illinois

J. H. Bigger (May): Phyllophaga are scarce in central Illinois. Brood C of Phyllophaga observed abundant in a single field near Jacksonville early in April.

C. C. Compton (May 15): A few Phyllophaga fusca Froel. taken at lights at Arlington Heights on May 13, this being the first collection.

Kentucky

H. Garman (May): Adults of Phyllophaga gibbosa Burm., P. fusca Froel., P. hirticula Knoch are common.

Michigan

R. H. Pettit (May 22): Adults of June beetles are exceptionally plentiful with the southern half of the State badly infested. An attempt is being made to chart the distribution of the adults.

Wisconsin

E. P. Breakey (May 23): Beetles are beginning to appear.

Minnesota

A. G. Ruggles and assistants (May): White grubs are generally scarce to moderately abundant over the greater part of the Southern third of the State. They have been reported as very abundant in Chokio only.

Iowa

Carl J. Drake (May 20): White grubs are moderately to very abundant in eastern part of the State. Brood A appears every three years.

C. N. Ainslie (May 13): Great numbers of these larvae

were found in the vicinity of Sioux City this spring. The chilly weather has hindered the flight of the adults until now, but many are just below the surface. The larvae are of various instars, a great many being nearly mature and attacking corn, lawns, etc.

Missouri

L. Haseman (May 24): White grubs throughout the State are very abundant, but the adults are not yet abundant.

JAPANESE BEETLE (Popillia japonica Newm.)

New Jersey

H. B. Weiss (April 20): Depending on section of State, the beetles are abundant to very abundant, scarce to absent. (May 18): The Japanese beetle grubs are very abundant, especially in the city of Trenton in grass lawns.

CUTWORMS (Noctuidae)

Maine

C. R. Fhipps (May 21): Agrotis c-nigrum L. is moderately abundant on blueberry in Cumberland and Hancock Counties.

Maryland

E. N. Cory (May 6): Reported moderately abundant on spinach.

Virginia

P. J. Chapman (May 22): Cutworms are moderately abundant on cucumber, beans, carrots, and cabbage.

North Carolina

C. H. Brannon (May 18): Cutworms have caused very severe damage to tobacco this season. Many fields have been set three times. Much damage has also been caused to field and garden crops in general.

South Carolina

M. H. Brunson (May 18): Agrotis ypsilon Rott. is moderately abundant.

Florida

J. R. Watson and E. W. Berger (May 21): Cutworms are very abundant over the State.

Kentucky

H. Garman (May): Cutworms are destructive at Eminence, Agrotis ypsilon Rott. occasionally seen, Agrotis c-nigrum L. frequently seen.

Minnesota

A. G. Ruggles and assistants (May): Cutworms are being reported in the usual numbers throughout the southern part of the State, and there are reports of very severe depredations from Grand Rapids, Tracy, and Norman County.

Iowa

C. J. Drake (May 22): Cutworms, several species, are quite abundant in some cornfields and gardens throughout a large portion of the State.

Nebraska

M. H. Swenk (May 19): The spotted cutworm was reported from Lincoln on May 19 as moderately abundant.

Alabama J. M. Robinson (May 23): At Brewton cutworms are moderately abundant on corn.

Mississippi R. W. Harned and assistants (May): Cutworms were reported as moderately abundant at Lucedale, Wiggins, Gulfport, and Houston, and as scarce at Pascagoula, Ocean Springs, Holly Springs, and Jackson.

Idaho C. Wakeland (May 21): Cutworms are quite abundant and injurious in a few grain fields and many gardens.

Oregon Don C. Mote (April 29): Cutworms (many species) throughout the entire State are very abundant.

PALE WESTERN CUTWORM (Porosagrotis orthogonia Morr.)

Kansas J. W. McColloch (May 6): A farmer at Oakley reports that a cutworm has killed out 1,000 acres of wheat. He states that the worms work entirely below ground and cut the plants off. His description of the worm and its injury suggests the pale western cutworm. This insect has been taken in this area in previous years.

BERTHA ARMYWORM (Barathra configurata Walk.)

North Dakota J. A. Munro (May 16): The Bertha armyworm was prevalent in northern counties last season attacking sweet clover, flax, and other crops. Farmers in those counties report the plowing up of many pupae this spring in fields which were infested last season. This pest is widely spread over the Canadian provinces and has only during the past season spread into North Dakota to such an extent that it is considered a real pest.

CEREAL AND FOREST - CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

Indiana J. J. Davis (May): The Hessian fly is very abundant from Terre Haute to Evansville and about two counties wide from the Illinois line. The fly appeared early before wheat had made much growth and as a result wheat was killed as in the fall and large acreages will be plowed under.

Illinois W. F. Flint (May): Infestation by the spring brood of the Hessian fly will be moderately heavy, judging from the few fields in west-central Illinois made by J. H. Bigger showed 51 per cent of the plants infested. The number of maggots per plant runs from 1 to 17.

J. H. Bigger (May): Wheat tillered abundantly. The Hessian fly was moderately abundant in central Illinois, but small loss is likely.

Missouri L. Haseman (May 24): Throughout the State the Hessian fly is moderately abundant; it is on the increase over the wheat-growing section of the State.

Kansas J. W. McColloch (May 20): The heaviest infestation of the Hessian fly this spring appears to be in central and southern Kansas. It is spotted and little injury has been reported.

CHINCH BUG (Blissus leucopterus Say)

Illinois J. H. Bigger (May): The chinch bug is scarce, being less abundant than for many years in central Illinois.

A BEETLE (Anomala binotata Gyll.)

Nebraska H. H. Swenk (May 21): A Knox County correspondent reported under date of May 13 that A. binotata was so abundant in his oat fields that just before sundown the beetles gave the appearance of a swarm of bees.

CORN

CORN EAR WORM (Heliothis obsoleta Fab.)

Florida J. R. Watson and E. W. Berger (May 21): The corn ear worm is very abundant over most of the State.

Alabama J. M. Robinson (May 23): Throughout the State the corn ear worms are moderately abundant.

O. T. Deen (May 9): This insect is working on at least 95 per cent of tomato fruit at Grand Bay and attacking foliage also.

K. L. Cockerham (May 9): This insect was reported by S. C. Brummitt at Grand Bay. It was causing severe damage to a 4-acre bean field. The larvae were feeding on the pods.

Ohio and Mississippi T. H. Parks (May 15): These larvae were sent in by a wholesale merchant of Akron, Ohio, who complained of their damaging green beans shipped in from the State of Mississippi. Larvae were from one-fourth to three-fourths grown when received.

Mississippi R. W. Harned and assistants (May): The corn ear worm was reported as very abundant at Copiah, Laurel, and Ocean Springs, and moderately abundant at Moss Point, Lumbert, Lucedale, and Wiggins.

K. L. Cockerham (May 10): The larvae of this insect are doing severe damage to early corn in the vicinity of Biloxi. They destroy the young tassels as they come out and prevent the formation of pollen. They are also attacking young tomatoes.

So far the injury by this insect is more severe than for several preceding years at the same date.

Louisiana W. E. Hinds (May 29): The corn ear worm is very abundant.

Texas F. L. Thomas (May 22): In Brazos and Williamson Counties the corn ear worm is more abundant than usual.

S. W. Clark (April 8): This insect is attacking tomatoes at Weslaco, and has been observed in normal abundance.

Haiti R. C. Smith (May 6): It is usually stated here that sweet corn can not be grown in Haiti because of ants, white grubs, and wireworms on the roots, and ants, *Polistes* with other wasps, and leafhoppers on the foliage. We succeeded by constant watching in growing some sweet corn which was, however, unfit for food because of the attacks of the corn ear worm. From 1 to 5 larvae occurred in each ear. The same varieties of colors of larvae were evident.

STALK BORER (*Papaipema nebris nitela* Guen.)

Maine C. R. Phipps (May 21): The stalk borer is destructive to flowers.

New Jersey H. B. Weiss (April 20): The stalk borer is generally distributed over the State in moderate abundance.

Minnesota A. G. Ruggles and assistants (May): The stalk borer was reported as very abundant on dahlias at Austin, and moderately abundant in Rice, Fillmore, and Cottonwood Counties, but scarce in other parts of the State.

Missouri L. Haseman (May 24): This insect has not yet attracted any attention, probably because of the late spring.

Mississippi R. W. Harned (May 23): Larvae identified by J. M. Langston as the moth stalk borer were collected in a tomato stalk at Crystal Springs on May 13.

FALL ARMYWORM (*Leptyna frugiperda* S. & A.)

Florida J. R. Watson (May 22): Around Blountstown in western Florida there is a heavy infestation of the fall armyworm. It is in this region that previous outbreaks have first occurred and the present outbreak may mean a considerable number of these insects during the coming summer.

Alabama S. C. Brummitt (May 23): Severe injury to corn and other field crops was reported from Grand Bay.

J. M. Robinson (May 23): Destroying corn, grass, cotton, etc.,

in Baldwin, Escambia, and Hale Counties, and in other counties destroying only corn and cotton.

Mississippi

R. T. Harned and assistants (May): Reports of a rather serious outbreak of the southern grassworm have been received from several counties in the southern part of the State, including George, Stone, Harrison, Jackson, and Perry. The first specimens received at this office arrived on May 12 from Lucedale, George County, with the information that the worms were causing serious damage to grass and beginning to attack corn. A 90 per cent infestation of the grassworm was reported in one cornfield at Perkinston May 14. Such serious injury was caused to young corn on two farms in Jackson County that it was replanted. The outbreak at Wiggins has caused serious damage to corn, sugarcane, and cotton. Over 100 acres of corn were totally destroyed. In one field they destroyed several acres of cotton before they were checked with spray. One newcomer from the West planted about an acre of barley. The stand was good until the grassworm went through it, leaving bare ground behind. The injury is already done. Parasitism is quite small. I examined 100 larvae at different parts of a field and found one larva bearing one parasitic egg.

T. E.

Louisiana

T. E. Holloway and Haley (May 16): The southern grassworm was found on young corn in Jefferson Parish. Some of the larvae were full-grown. One moth was seen.

CORN BILLBUGS (Sphenophorus spp.)

Florida

J. R. Watson and E. W. Berger (May 31): Billbugs are moderately abundant.

Georgia

C. J. Drake (May 22): Corn billbugs just received at Tilton from a farmer who stated that the bugs were extremely abundant and destroying his corn.

CORN LANTERN FLY (Peregrinus maidis Ashm.)

Florida

J. R. Watson (May 22): A lantern fly, P. maidis, is doing damage to corn about Gainesville. This insect is usually very injurious to late-planted corn which it attacks in July, but it is unusual to have an infestation so early in the season.

SUGARCANE BEETLE (Eutheola rugiceps Lec.)

South Carolina

M. H. Brunson (May 22): The sugarcane beetle has been damaging corn at Westminster.

Mississippi

R. T. Harned (May 17): On April 27 county agent J. S. McBee, Columbus, sent specimens with the following comment: "They are proving very disastrous to the corn in the garden of one of our farmers."

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

- Ohio H. C. Mason (May 15): The spotted cucumber beetle was observed in the field at Columbus on May 16.
- North Carolina C. H. Brannon (May 20): Root worm damage to corn has been very severe over the State this season. Many fields have been replanted owing to the damage by this insect.
- Florida J. R. Watson and E. W. Berger (May 21): The spotted cucumber beetle is moderately abundant over the State.
- Mississippi R. W. Harned and assistants (May): On April 26 a correspondent at Auburn, Lincoln County, sent in a number of larvae that were identified by J. M. Langston as D. duodecimpunctata, with the comment: "They have totally ruined this corn in a few days." Inspector Kimble Harmon on April 22 observed cucumber beetles appearing in considerable numbers on orange trees. He sent 5 specimens, 4 of which proved to be D. vittata Fab. and the other the above-named species. Specimens of the 12-spotted cucumber beetle were sent from Mize May 5 and from Lena May 10 with the information that they were causing serious injury to watermelon plants. Specimens were reported as injuring roses at Columbus May 8. Larvae were received May 30 from Bentonla, where they were reported as seriously injuring young corn.
- K. L. Cockerham (April 27): These adults have been injuring gladiolus blossoms and spikes at Biloxi this spring. By eating the flowering buds as they open they so disfigure them that they are unmarketable.
- Louisiana W. E. Hinds (May 29): The spotted cucumber beetle is very abundant in Plaquemines Parish.
- Texas F. L. Thomas (May 22): This insect is found throughout the State in moderate abundance.
- Arizona O. L. Barnes (May 18): The spotted cucumber beetle is very abundant and doing some damage to squashes about 6 miles north of Phoenix.

COWPEAS

COWPEA CURCULIO (Chalcodermus aeneus Boh.)

- Georgia C. I. Snapp (May 16): This insect is more abundant than usual this year at Fort Valley.

GRASS

FALSE CHINCH BUG (Nysius ericre Schill.)

O. L. Barnes (May 6-7): The false chinch bug was found very abundant in a few small areas near Phoenix attacking grass, tamarisk, and small citrus. They were more abundant in non-irrigated plots and in land that was not recently irrigated.

ALFALEA

ALFALEA WEEVIL (Phytonomus posticus Gyll.)

H. L. Sweetman (May 20): Alfalfa weevil egg laying commenced about May 15 at Casper.

C. Wakeland (May 21): Adults of the alfalfa weevil are very scarce and larvae are not abundant enough to cause injury in the southern and southwestern parts of the State; 500 sweeps of the net May 18 resulted in the capture of 5 adults and 39 larvae and also 25 adults of the alfalfa weevil parasite, Bathyplectes curculionis Thoms.

G. G. Schweiss (May 7): The first eggs of the alfalfa weevil were found today, which is late compared with other years. Weather has been bad and temperatures below normal.

D. C. Mote (April 29): In eastern Oregon the alfalfa weevil is moderately abundant.

PEA APHID (Illinoia pisi Kalt.)

J. E. Dudley, Jr. (May 1): General hatching of winter eggs during the unusually warm period the latter part of March in Dane, Jefferson, and Columbia Counties. On account of the continued cool, rainy weather throughout most of April there has been little increase in population. There is at present a general infestation of stem mothers but very little reproduction. A few fields of early peas are up but so far they have not been infested.

M. M. High (April 30): The pea aphid has suddenly showed up at Gulfport and has seriously injured one field of peas near London. This is the first time I have observed this aphid in injurious numbers in a number of years.

G. F. Knowlton (May 8): The pea aphid is quite abundant on young alfalfa at Woods Cross and Bountiful.

POTATO APHID (Illinoia solanifolii Ashm.)

Nevada G. G. Schweiss (May 20): The alfalfa aphid (Illinoia solanifolii (creeli)) was observed on May 18 doing considerable damage at Reno. (April 24): The only outbreak of insects reported has been that of aphids on alfalfa in Clark County.

CLOVER

CLOVER APHID (Anuraphis bakeri Cowan)

Minnesota C. A. Anderson (May 14): The clover aphid is appearing and starting to do damage at Littlefork.

CLOVER SEED MIDGE (Dasyneura leguminicola Lint.)

Oregon D. C. Mote (April 29): This insect is very abundant throughout the State.

F R U I T I N S E C T S

APPLE

APHIDS (Aphididae)

Massachusetts A. I. Bourne (May 23): Early in the season there was an unusual abundance of plant lice at Amherst. Every indication pointed to their being a serious problem of the fruit grower, but the cold weather has so reduced their number that several growers are safely leaving nicotine out of their calyx sprays.

Connecticut M. P. Zappe (May 24): Green aphids have been abundant on opening buds. Many orchards have few left. Some rosy aphids are present and are beginning to roll leaves.

Michigan R. H. Pettit (May 17): Bud lice, the rosy apple aphid, and probably A. pomi DeG. are abundant in the State.

Minnesota A. G. Ruggles and assistants (May): Aphids are reported as generally scarce over the southern third of the State, the only places reporting unusual abundance being Mower and Redwood Counties.

Alabama J. M. Robinson (May 23): Fruit aphids are very abundant throughout the State.

APPLE APHID (Aphis pomi DeG.)

New York Weekly News Letter, N. Y. State College of Agr., May: Over the greater part of the fruit belt aphids are unusually scarce,

the single exception being Chautauqua County in the western part of the State, where there are indications of serious trouble from these insects. (abstract J. A. H.)

Maryland E. N. Cory (May 6): Green apple aphids are very abundant in the State.

Oregon D. C. Mote (April 29): This insect is occurring throughout the State in great abundance.

ROSY APPLE APHID (Anuraphis roseus Baker)

New York Weekly News Letter, N. Y. State College of Agr., May: In general the rosy apple aphid is scarce over the fruit belt, the only exception being Chautauqua County. (abstract J. A. H.)

Virginia W. J. Schoene (May 34): Spring migrants of Aphis sorbi were leaving the apple trees at Hollins in large numbers on May 11. The aphids occurred in large numbers on curled leaves on some trees. Generally speaking, the infestation was mild.

Indiana J. J. Davis (May 28): The rosy apple aphid was reported under date of May 12 by L. F. Steiner from Bedford to the effect that this aphid has been causing considerable damage in some orchards around Bedford since the latter part of April. It is moderately abundant in southern Indiana.

Mississippi H. H. Carpenter (May 21) The rosy apple aphid is very abundant at Houston and Okolona.

Oregon D. C. Mote (April 29): This insect is found throughout the State in great abundance.

APPLE GRAIN APHID (Rhopalosiphum prunifoliae Fitch)

New York Weekly News Letter, N. Y. State College of Agr., May: This species is unusually abundant in Seneca, Orleans, Orange, Dutchess, Ontario, and Ulster Counties. (abstract J. A. H.)

Pennsylvania T. L. Guyton (May 21): Rhopalosiphum prunifoliae is very abundant.

Maryland E. N. Cory (May 6): This species was abundant early in the spring.

Virginia W. J. Schoene (May 24): The grain aphid, Aphis avenae, had largely left the trees about two weeks prior to May 11.

South Carolina M. H. Brunson (May 23): Apple grain aphids are very abundant in the college apple orchards at Clemson College.

Ohio T. H. Parks (May 25): This plant louse was more abundant than usual on the buds during April and colonies developed on

the leaves during the first half of May. By May 20 they had grown wings and disappeared from the trees and apparently little damage has been done.

Wisconsin

E. P. Braakey (May 23): Aphisavenae is quite abundant.

CODLING MOTH (Carpocapsa pomonella L.)

New York

Weekly News Letter, N. Y. State College of Agr., May 20: Codling moth pupae were observed under bands in Orange County on May 15. Many larvae had not pupated on that date.

Delaware

H. L. Dozier (May 18): The codling moth is now issuing from hibernation in abundant numbers.

Virginia

T. J. Schoene (May): The first adult moth emerged at Hollins on April 18. Up to May 16, 258 moths had been preserved, 199 worms, and 759 pupae.

Ohio

T. H. Parks (May 25): The codling moth is emerging very late from the overwintering cocoons under bark. Emergence commenced at Cincinnati and Columbus on May 24. Previous to that date only stragglers located on south exposures had emerged. The brood is apparently below normal in numbers.

Indiana

J. J. Davis (May): The codling moth is moderately abundant.

Illinois

S. C. Chandler (May 13): The first codling moth emerged at Carbondale on April 19, and emergence increased daily to May 13. It is now moderately abundant.

W. P. Flint (May): While the codling moth started emerging in Mr. Chandler's cages in southern Illinois on April 19, the weather following this period has been very cool and only small numbers of moths have emerged in the south end of the State. Emergence did not start in western Illinois until May 12 and in east-central Illinois on the same date. The bulk of emergence of the first brood will undoubtedly occur in both these sections during the next week.

Minnesota

A. G. Ruggles and assistants (May): The codling moth is reported as very abundant at Austin, Tracy, and Chatfield, and from moderately abundant to scarce in other fruit-growing sections.

Nebraska

M. H. Swenk (May 21): The codling moth larvae and pupae have been found moderately abundant at Lincoln.

Missouri

L. Haseman (May 24): Emergence of the codling moth has been reported from Columbia, Marionville, St. Joseph, Seymore, Waverly, and Independence. The peak of emergence at Columbia was from May 20 to 25.

- Wyoming H. L. Sweetman (May 20): Overwintering codling moth larvae have pupated at Casper.
- Nevada G. G. Schweiss (May 20): The codling moth is moderately abundant at Reno.
- New Mexico J. R. Eyer (May 21): Adults captured in abundance in bait pans from April 25 to the present date; females containing eggs at State College.
- Idaho C. Wakeland (May 21): The codling moth is moderately abundant in southwestern Idaho. The first emergence was on May 13.
- Washington E. J. Newcomer (May 22): Moths began emerging about May 10 and owing to continued warm weather they are emerging rapidly. This should make the first brood relatively short.
- Oregon D. C. Mote (May 24): Adults began to emerge in the Willamette Valley on May 15 and eggs were laid May 23. Appears to be very abundant.

EASTERN TENT CATERPILLAR (*Hyalosoma americana* Fab.)

- Maine C. R. Phipps (May 21): The eastern tent caterpillar is very abundant throughout the State.
- New Hampshire P. R. Lowry (May 17): The eastern tent caterpillar is moderately abundant on wild cherry and there are some on apple at Durham.
- Massachusetts A. I. Bourne (May 23): The tent caterpillars are less abundant than for several seasons at Amherst. In restricted areas they can still be found in considerable abundance. The cold, rainy season has slowed development of crops and pests so that they have not yet begun to make headway.
- J. V. Schaffner, Jr. (May 25): First hatching of *M. americana* of 1929 in vicinity of Melrose found on April 8. Infestation seems to be decreasing in some localities.
- Connecticut W. E. Britton (May 25): Cold weather with occasional frost has been unfavorable for the development of the larvae at Litchfield. There are very few nests this year.
- New York Weekly News Letter, N. Y. State College of Agr., May: These caterpillars are hatching in Chautauque, Monroe, and Oswego Counties, and already abundant in Columbia County. (abstract J. A. H.)
- New Jersey H. B. Weiss (May 18): The eastern tent caterpillar is scarce in all parts of the State on wild cherry and apple.

- Pennsylvania T. L. Guyton (May 21): The eastern tent caterpillar is moderately abundant at Harrisburg and in the Philadelphia district. It is more abundant at Harrisburg than this time last year; in fact, last year it was to be found only occasionally, and this year it is found more or less scattered around the district.
- Delaware H. L. Dozier (May 18): The young worms and nests of the eastern tent caterpillar are abundant.
- Maryland E. N. Cory (May 6): This insect is moderately abundant; hatched in Calvert County on March 25.
- Virginia W. A. Thomas (May 1): This insect is attacking apples between Richmond and Washington, causing them to be badly defoliated.
- W. J. Schoene (May): There was a heavy infestation of the eastern tent caterpillar in unsprayed orchards throughout the central part of the State this year.
- West Virginia F. E. Brooks (May): For a few years this species has been increasing in West Virginia, especially in certain localities in the more elevated parts of the State. In the vicinity of Philippi, Barbour County, there are localities where practically every wild cherry, crab, and neglected apple tree is now almost or entirely defoliated. In a commercial apple orchard near Philippi, where spraying has been carefully done, no tents are to be seen.
- North Carolina W. A. Thomas (May 1): About 10 per cent of all wild cherry is defoliated at Chadbourne.

TENT CATERPILLARS (Malacosoma spp.)

- Washington T. W. Baker (May 23): The tent caterpillars M. disstria Hbn and M. pluvialis Dyar appear much more widespread and more abundant than last year throughout western Washington, being particularly bothersome on home orchards and a few ornamental shrubs. The caterpillars are later in hatching than they were in 1928.

FRUIT TREE LEAF ROLLER (Archips argyrospila Walk.)

- New York Weekly News Letter, N. Y. State College of Agr., May: The leaf rollers began hatching the first week in May in the Lake fruit belt. They seem to be quite generally prevalent throughout this region and the Hudson River Valley. (abstract J. A. H.)
- New Mexico J. R. Eyer (May 21): This insect is being caught in codling moth bait pans and appears to be very abundant.

Idaho

C. Wakeland (May 21): The fruit tree leaf roller is present to a limited extent in practically all apple orchards in southwestern Idaho, but is of no commercial importance and has not been since 1924. Infestation in the Twin Falls vicinity last year was very severe resulting in from 25 to 35 per cent injured fruit in the fall in many commercial orchards. This season infestation is much lighter as indicated by counts of egg masses per tree for the two seasons.

Oregon

D. C. Mote (April 29): Fruit tree leaf rollers are moderately abundant in the State but are not doing much damage now.

CASE BEARERS (Coleophora spp.)

New York

Weekly News Letter, N. Y. State College of Agr., May: Case bearers, C. fletcherella Fern. and C. malivorella Riley, are reported as being more numerous than last year in Suffolk County and as occurring in rather threatening numbers in Erie, Ontario, and Chautauqua Counties. (abstract J. A. H.)

EYE-SPOTTED BUDMOTH (Spilonota ocellana Schiff.)

Massachusetts

A. I. Bourne (May 23): Budmoths have been found to be moderately abundant this season, but never enough to demand particular attention at Amherst.

Connecticut

M. P. Zappe (May 24): Young apple orchards in Litchfield County have been attacked and many terminal buds injured. The insect is webbing up leaves of older trees in Hartford County. More abundant than I have ever seen them before.

New York

Weekly News Letter, N. Y. State College of Agr., May: Although reported from practically all of the fruit-growing counties, the eye-spotted budmoth is of serious importance in Dutchess, Monroe, and Ontario Counties only.

CANKER WORMS (Geometridae)

Kansas

J. W. McColloch (May 20): Defoliation of elm and apple trees has been reported during the past week from Ozawie, Abilene, Salina, Solomon, and Manhattan.

Daily Eagle, May 12: Alfred McDonald, city forester at Wichita, states that spraying of street trees for canker worms is nearly ended, since the larvae have ceased feeding for the season. The canker worms have been injurious for the last 3 years, 1927, 1928, and 1929, and the city has carried on spraying in the more heavily infested neighborhoods. (abstract F. L. Wadley.)

APPLE FLEA WEEVIL (Orchestes pallicornis Say)

Ohio T. H. Parker (May 25): The apple flea weevil is becoming a serious apple pest in several commercial orchards in central and southcentral Ohio. It has increased rapidly the past two years and has been feeding on the buds and leaves for the past six weeks. Regular sprays do not check it. Many larvae have now pupated in the mines in the leaves and such leaves appear as though scorched. Injury has been serious in only certain orchards of each county, and these orchards are under the sod mulch system.

APPLE REDBUG (Lygidea mendax Reut.)

New York Weekly News Letter, N. Y. State College of Agr., May: The first nymphs appeared in the lower Hudson River Valley during the first few days in May. Large numbers were reported later in the month from both the Hudson River Valley and the Lake fruit section. (abstract J. A. H.)

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Florida J. R. Watson and E. W. Berger (May 21): The San Jose scale is moderately abundant over the northern half of the State.

Illinois J. H. Bigger (May): The San Jose scale is scarce, although in isolated instances it is plentiful in Calhoun and Pike Counties.

Iowa C. J. Drake (May 20): The San Jose scale is doing considerable damage in the southeastern section of the State.

Mississippi R. W. Harned and assistants (May): The San Jose scale is reported as very abundant from practically all parts of the State where orchards are not commercially sprayed.

Texas F. L. Thomas (May 22): A few complaints have been received from northeastern Texas.

Idaho C. Wakeland (May 21): The San Jose scale will undoubtedly cause more loss in southern and southwestern Idaho this season than ordinarily owing to prolonged severe winds during the period for dormant spraying. Very ineffective spraying resulted and in some instances the dormant spray was omitted entirely.

Nevada G. G. Schweiss (May 20): This insect is moderately abundant.

Oregon D. C. Mote (March 29): This insect is found throughout the State in moderate abundance, but is very scarce in the vicinity of Corvallis.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

Indiana J. J. Davis (May 28): This scale has been reported as destructive to lilac at Fowler May 20. It is normally abundant in the northern half of the State.

Michigan R. H. Pettit (May 17): The oyster-shell scale is rather plentiful.

Minnesota A. G. Ruggles and assistants (May): The oyster-shell scale is very abundant in Murray, Fillmore, Mower, Dodge, Ramsey, Redwood, and Lyon Counties, and moderately abundant over the remainder of the southern third of the State.

South Dakota H. C. Scverin (May 18): Eggs of the oyster-shell scale came through the winter in excellent condition and are very abundant.

Nebraska M. H. Swenk (May 21): Apple orchards have been reported infested in northeastern Nebraska, especially in Butler, Wayne, Madison, and Cedar Counties.

SCURFY SCALE (Chionaspis furfura Fitch)

Nebraska M. H. Swenk (May 21): The scurfy scale was reported as very abundant in apple orchards in the northeastern part of the State, especially in Butler, Wayne, Madison, and Cedar Counties.

EUROPEAN RED MITE (Paratetranychus pilosus C. & F.)

Maine C. R. Phipps (May 21): Eggs of this insect are very abundant. It was first recorded in Maine in 1927.

Massachusetts A. I. Bourne (May 23): This insect began to hatch at Amherst the first few days in May. It is about normal in abundance, but has been well taken care of in commercial orchards by spraying.

Connecticut P. Garman (May 24): The European red mite has been reported in the usual abundance on apples in New Haven County. It is controlled in most commercial orchards.

New York Weekly News Letter, N. Y. State College of Agr., May: — These mites began hatching the last of April in the Hudson River Valley and during May they were reported from practically the entire fruit belt, but not in serious numbers. (abstract J. A. H.)

PEAR

PEAR PSYLLA (Psyllia pyricola Foerst.)

Connecticut P. Garman (May 24): This insect was observed to be moderately abundant in one pear orchard and scarce in all other visited in New Haven County.

M. P. Zappe (May): This insect appears to be less abundant than last year. Unsprayed trees show very few insects, even those that had an infestation last year.

New York Weekly News Letter, N. Y. State College of Agr., May: The pear psylla began hatching during the last part of April, but in decidedly smaller numbers than usual throughout the entire fruit belt. (abstract J. A. H.)

Delaware H. L. Dozier (May 17): Adults of the pear psylla started to issue at Wilmington on May 8.

PEAR MIDGE (Contarinia pyrivora Riley)

New York Weekly News Letter, N. Y. State College of Agr., May: Midge-infested pears are quite numerous in the Hudson River Valley, especially in Columbia and Dutchess Counties. (abstract J. A. H.)

PEAR LEAF BLISTER MITE (Eriophyes pyri Pagst.)

New York Weekly News Letter, N. Y. State College of Agr., May: This insect is reported as severe in some orchards in Ontario and Onondaga Counties. (abstract J. A. H.)

TARNISHED PLANT BUG (Lygus pratensis L.)

Washington E. J. Newcomer (May 22): This insect has done more damage to pears than usual. In a few cases it has practically ruined the crop by piercing the fruit buds.

PEACH

PEACH BORER (Aegeria exitiosa Say)

Maryland E. N. Cory (May 6): The peach borer is appearing in plentiful numbers in untreated orchards.

South Carolina M. H. Brunson (May 18): This insect is moderately abundant.

Florida J. R. Watson and E. W. Berger (May 21): The peach borer is moderately abundant in the northern half of the State.

Iowa C. J. Drake (May 20): The peach borer is not common. Only one complaint has been received in 6 years.

Mississippi R. W. Harned and assistants (May): The peach borer is reported as very abundant in Durant, Jackson, Chickasaw, and Calhoun Counties, and moderately abundant in Gulfport, Wiggins, Yazoo City, Alcorn, Prentiss, Moss Point, Ocean Springs, and Laurel.

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busek)

Pennsylvania T. L. Guyton (May 21): The oriental fruit moth is very abundant at Harrisburg.

Delaware H. L. Dozier (May 18): The majority of the oriental fruit moths have issued by this date.

Maryland E. N. Cory (May 6): Egg-laying has been delayed. Only a few eggs have been found.

North Carolina C. H. Brannon (May 15): This pest is causing unusually severe damage to peaches over all the State.

Georgia O. I. Snapp (May 16): The infestation of middle Georgia is light, as it was in 1928 at this season of the year. Larvae of the second generation have started to pupate.

Indiana J. J. Davis (May): The oriental fruit moth is very abundant in the southern portions of the State.

Illinois S. C. Chandler (May): Emergence of the oriental fruit moth from larvae held over winter in corrugated cardboard strips out of doors took place at Carbondale on April 6, when 90 per cent of the peach petals were off, and continued for one month, but 80 per cent emerged the first two days; 74 per cent of the larvae put into winter quarters failed to emerge, and hibernation studies showed that larvae under normal orchard conditions suffered a mortality of about the same severity. The first-brood infestation, as indicated by the wilted twigs, is light except in a few favored locations.

Michigan R. H. Pettit (May 17): Adults were out on April 26.

Alabama J. M. Robinson (May 23): This insect is moderately abundant throughout the State. Adults of the first generation emerged a week ago.

Mississippi R. W. Harned and assistants (May): The oriental fruit moth was reported as moderately abundant at Laurel and Holly Springs, and scarce at Okolona.

PLUM CURCULIO (Conotrachelus nemophar Hbst.)

New York Weekly News Letter, N. Y. State College Agr., May 27:

Plum curculio punctures began to appear during the last week of May in the Hudson River Valley. (abstract J. A. H.)

- Maryland E. N. Cory (May 6): The plum curculio is very abundant.
- Virginia P. J. Chapman (May 22): This insect is moderately abundant on peach, plum, and apple.
- West Virginia F. E. Brooks (May): This species has been late in appearing this spring, probably on account of the prolonged cool weather. Oviposition scars were not to be found in plums and other fruit near the middle of May, but by May 26 the scars were abundant.
- North Carolina C. H. Brannon (May 20): The curculio is causing unusually heavy damage to peaches this season. Specimens and complaints are being received from over all the State.
- Georgia O. I. Snapp (May 16): The heavy drop as a result of the plum curculio and weather conditions left a very light crop of peaches in many orchards. The first-generation beetles are expected from the soil early in June, and we anticipate much damage to the light crop in those orchards in which control measures have not been enforced, as the infestation is very heavy.
- Florida J. R. Watson and E. W. Berger (May 21): This insect is very abundant in the northern half of the State.
- Illinois J. H. Bigger (May): Examinations for the plum curculio were made in Pike County May 7, but the first adult was observed on May 11.
- S. C. Chandler (May): The curculio infestation is moderate in southern Illinois in peach orchards, and regular jarrings indicate that it will not be so severe as it was last season.
- Minnesota A. G. Ruggles and assistants (May): The plum curculio is moderately abundant throughout the fruit-growing section.
- Iowa C. J. Drake (May 20): This insect is fairly plentiful over the State.
- Alabama J. M. Robinson (May 23): The plum curculio is very abundant over the entire State.
- Mississippi R. W. Harned and assistants (May): The plum curculio is reported as worse than it has been for several years in Chickasaw, Calhoun, Lauderdale, Harrison, and Yazoo Counties, and moderately abundant throughout practically the remainder of the State.

CHERRY

BLACK CHERRY APHID (Myzus cerasi Fab.)

New York Weekly News Letter, N. Y. State College of Agr., May: The black cherry aphid is very numerous on sweet cherries in the Hudson River Valley.

Maryland J. A. Hyslop (May 29): Large colonies of these aphids are on the terminal leaves of all varieties of cherry (sweet and Japanese) at Avenel. The leaves are starting to curl.

WEEVILS (Dyslobus spp.)

Washington W. W. Baker (May 22): D. decoratus Lec. is numerous on cherry and hydrophyllum, and D. granicollis Lec. is numerous on cherry, wild gum, and salmonberry around Puyallup.

PLUM

RUSTY PLUM APHID (Eysteroneura setariae Thos.)

Georgia O. I. Snapp (May 16): This insect, which is usually abundant in middle Georgia, is apparently scarce this year. We have noted no damage in plum orchards and no complaints of damage have reached the laboratory.

Missouri L. Haseman (May 24): This insect is moderately abundant at Columbia.

Oklahoma C. E. Sanborn (May 21): Aphis setariae is moderately abundant.

THISTLE APHID (Aphis cardui L.)

Neb. C. Wakeland (May 21): Aphis cardui is very abundant on prunes in the southwestern part of the State. It is now curling the leaves badly and clustering on the fruit stems.

RASPBERRY

RASPBERRY FRUIT WORM (Byturus unicolor Say)

Michigan R. E. Pettit (May 29): I received specimens of B. unicolor this morning from Berrien County, with the report that they are threatening the crops of this important small fruit district. I have not yet ascertained how widespread the infestation is, but from the tone of the writers, one would gather that they are considerably alarmed.

Washington W. W. Baker (May 22): The raspberry fruit worm, which has been very injurious to loganberries during the past two years,

seems much more generally prevalent judged by the occurrence of adults this spring. Numerous instances have been reported and observed of the feeding of adult beetles in the terminals of the new growth of raspberry, and this has been serious enough in some cases to interest growers to apply control measures. Adults have also been observed occasionally feeding on strawberry blossoms, often completely destroying the flower and fruit. Petioles of cherry and apple are sometimes selected by the adults. Adults were first observed May 9 around Puyallup.

SNOUTY TREE CRICKET (Oecanthus niveus DeG.)

South Dakota

H. C. Severin (May 1): The usual number of complaints regarding this insect were received this year because of egg punctures to raspberry, chiefly, damage not usually being severe.

BLUEBERRY

Maine

C. R. Phipps (May 21): The following insects are moderately abundant on blueberry in Cumberland and Hancock Counties: Lycophotia occulta L., L. stricta Morr., Miselia purpurigera W. and Lempra brunneicollis Groté.

GRAPE

APPLE TRIG BORER (Amphicorus bicaudatus Say)

Nebraska

M. H. Swenk (May 21): The grape cane borer was found injuring grapevines in Franklin County on April 22 and in Redwillow County on May 13.

GRAPE BERRY MOTH (Polychrosis viteana Clem.)

Delaware

H. L. Dozier (May 18): The grape berry moth is issuing in straggling numbers in overwintering cages at Newark and Camden.

GRAPE LEAF FOLDER (Desmia funeralis Hbn.)

Ohio

E. W. Mendenhall (May 27): I find the grape leaf folder doing some damage to the grape leaves at Columbus.

GRAPE SCALE (Aspidiotus uvae Comst.)

Missouri

L. Haseman (May 24): Mr. C.C. Bell of Boonville reports a serious epidemic of grape scale on his home vineyard.

CURRENT

CURRENT APHID (Myzus ribis L.)

New York

Weekly News Letter, N. Y. State College of Agr., May: Late in April and early in May the current aphid was doing considerable damage in Ulster and Orange Counties and late in May it was found in some plantings in Chautauqua County. (abstract J. A. H.)

Ohio

E. W. Mendenhall (April 29): The current aphid is beginning to show up on current leaves.

Minnesota

A. G. Ruggles and assistants (May): Aphids are moderately abundant on currents at Warren.

Utah

G. F. Knowlton (May 14): The current aphid, Coyptemyzus ribis, is beginning to cup the leaves on current bushes at Woods Cross, Brigham City, and Logan.

GOOSEBERRY FRUIT WORM (Lophodia grossulariae Riley)

Mississippi

J. E. McEvilly (May 22): This insect has been moderately abundant on cultivated blueberry plantings in the vicinity of Laurel.

CURRENT FRUIT FLY (Epochra canadensis Loew)

Washington

S. E. Crumb (May 22): Adults of the gooseberry fruit fly were observed ovipositing May 15 at Puyallup.

PECAN

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Mississippi

R. W. Harned (May 25): The walnut caterpillar is very scarce in the vicinity of A. & M. College, as I have examined several thousand trees and found only two colonies.

Texas

C. B. Nickels and C. C. Pinkney (May 21): Many egg masses of the walnut caterpillar have been observed on pecan trees in central Texas. There are large numbers of pupae still in the soil. It seems to be more abundant than last year.

A CASE BEARER (Acrobasis caryivorella Rag.)

Georgia

T. L. Bissell (May): Pecan shoots infested with larvae were taken at Experiment April 24 and at Barnesville April 26. Three moths emerged May 16, 17, and 23. This insect is commonly found mining and killing green shoots of young trees in this region.

HICKORY SHOOT CURCULIO (Conotrachelus aratus Germ.)

Mississippi

R. W. Harned (May 17): Nearly grown larvae of the hickory shoot curculio were collected on pecan trees near Tylertown April 27. Inspector N. D. Peets reports as follows: "I believe that I am safe in saying that this insect is damaging this pecan orchard fully 50 per cent."

PHYLLOXERA (Phylloxera spp.)

Mississippi

R. W. Harned (May 23): A large number of complaints in regard to phylloxera galls on pecan trees have been received during the past few weeks. These complaints have come from Yazoo, Washington, Adams, Holmes, Sharkey, Bolivar, Franklin, Stone, Lincoln, and George Counties. Eleven lots of P. devastatrix Perg. have been received and two each of P. notabilis Perg. and P. caryaeavellana Riley.

PERSIMMON

AN APHID (Myzocallis fumipennellus Fitch)

Georgia

T. L. Bissell (May): The first injury of the year was found on Hicoria glabra at Experiment April 30. Aphids and injury were common on the lower branches of Schley pecan at Barnesville on May 24.

CITRUS

MEDITERRANEAN FRUIT FLY (Ceratitis capitata Wied.)

General

Plant Quarantine and Control Administration (May 31): Mediterranean fruit fly surveys during the month of May showed only a limited increase in the territory known to be involved in infestation outside the areas reported in the last number of the Survey Bulletin. The general infestation may now be said to extend from San Mateo (near Palatka), Ormond, Summit, and Oxford on the north to Auburndale, Haines City, and Cocoa on the south. Throughout the outer third of this entire area the infestation is extremely sparse and represented only by occasional groves at considerable distances from one another. Infested Florida fruit has been intercepted during May in New York City; Little Rock, Arkansas; Columbus, Ohio; Ashburn, Savannah, and Valdosta, Georgia; West Monroe and Shreveport, La.; Greensboro, N. C.; and Dallas, Texas. Two adult flies have been captured at Jacksonville, Fla., in a private residence where a box of oranges from Orlando had been stored and consumed.

Haiti

E. C. Smith (May 6): A special effort is being made to

determine whether the Mediterranean fruit fly occurs in Haiti. It has not been found and is not known to occur here. We have been told that the Bureau of Entomology has no record of the pest having been taken in Haitian fruits.

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Florida J. R. Watson and E. W. Berger (May 21): The citrus whitefly is moderately abundant over the State, and less abundant in the peninsula than 15 years ago.

Alabama J. M. Robinson (May 23): The citrus whitefly is moderately abundant in Baldwin and Mobile Counties.

Mississippi R. W. Harned and assistants (May): This insect is reported as very abundant in Holmes, Leflore, and Attala Counties, and moderately abundant in Lincoln, Yazoo, Jackson, Harrison, and Lauderdale Counties.

Louisiana W. E. Hinds (May 29): The citrus whitefly is very abundant in Plaquemines Parish.

APHIDS (Aphididae)

Florida J. R. Watson (May 22): The green citrus aphid has done more damage than usual during the last spring. It is now diminishing in numbers very rapidly.

J. R. Watson and E. W. Berger (May 21): Aphis spiraeicola Patch is moderately abundant on citrus over most of the State.

Haiti R. C. Smith (May 6): Citrus aphids have been very bad on orange, grapefruit, and lime trees of the Horticultural Department at Fort-au-Prince. The leaves were badly curled before they were noticed. Several sprayings were necessary to bring them under control.

CITRUS THRIPS (Scirtothrips citri Moulton)

Arizona O. L. Barnes (May 16): This insect was found abundant and doing considerable damage on tender growth of young citrus plants in several nurseries in the Salt River Valley.

CITRUS RUST MITE (Eriophyes oleivorus Ashm.)

Florida J. R. Watson and E. W. Berger (May 21): The citrus rust mite is very abundant in the southern part of the State.

Alabama J. M. Robinson (May 23): This insect is moderately abundant in Mobile and Baldwin Counties.

Mississippi R. W. Harned and assistants (May): The citrus rust mite was

reported as very abundant in George and Harrison Counties and moderately abundant in Boulderdale County.

FLORIDA RED SCALE (Chrysomphalus ficus Ashm.)

Texas

F. L. Thomas (May 22): The Florida red scale is very abundant on euonymus hedge at Mercedes.

CALIFORNIA RED SCALE (Chrysomphalus aurantii Mask.)

Texas

S. W. Clark (April 30): This scale has been reproducing since April 1. Indications are that it will be less severe than last year, at which time it was very devastating to citrus over the whole Rio Grande Valley.

COTTONY-CUSHION SCALE (Icerya purchasi Mask.)

Mississippi

J. E. McEvilly (May 22): This scale is very abundant and scattered over large areas, killing valuable pittosporum bushes in Laurel. We have failed to establish enough ladybird beetles to reduce the scale.

Arizona

O. L. Barnes (April 27): New infestations by the cottony-cushion scale on pittosporum and grapefruit in the Salt River Valley near Phoenix have been reported.

TRUCK - CROP INSECTS

VEGETABLE WEEVIL (Listroderes obliquus Gyll.)

Alabama

O. T. Deen (May 22): Considerable damage was done to turnips by defoliation of the tops at Foley. Adults and larvae were found on this date.

M. M. High (May 27): The vegetable weevil has recently been found in 7 additional counties in Alabama, which are as follows: Tuscaloosa, Pickens, Greene, Sumter, Marengo, and Choctaw. It is now known to occur in 19 counties.

Mississippi

R. W. Harned (May 17): Adults of the vegetable weevil were reported on April 26 as injuring tomatoes near Jackson. (May 23): Only a few complaints have been received in regard to the vegetable weevil during the past few weeks as compared with the number of complaints received early in the spring. Mustard at Yazoo City was reported as seriously injured by the adult weevils on May 22. Tomatoes and Irish potatoes were reported as being "eaten up" by the weevils on April 27 at Hermonville. Serious injury to Irish potatoes was reported from Lexington on May 4 and to tomatoes at Taylorsville on May 11.

SEED CORN MAGGOT (Hylemyia cilicrura Rond.)

Maryland

E. N. Cory (May 6): Some reports on beans have been received.

Minnesota

A. G. Ruggles and assistants (May): The seed corn maggot is moderately abundant at Crosby and in the eastern part of Polk County, but is scarce over the remaining southern third of the State.

Iowa

C. J. Drake (May 20): The seed corn maggot is quite abundant over the State. A few fields of corn are damaged each year, and onions are also attacked.

Kansas

J. W. McColloch (April 30): Maggots, apparently of this species, received from Paola with the information that they were destroying a planting of watermelons.

A LEAFHOPPER (Homalodisca sp.)

Mississippi

K. L. Cockerham (May 24): Both nymphs and adults of this insect have been more numerous in Biloxi this spring than I have ever seen anywhere. They are found on practically all garden truck, although I do not know to what extent they are injuring the various crops. I have caught as many as 12 adults on one gladiolus spike and similar numbers on other crops such as corn, beans, and Irish potatoes.



tips and sometimes the sides have been badly enough eaten to render them valueless for market. There were 27 beetles in one hill of asparagus, that is, the growth from a single crown. It seems that the adjoining field had been in potatoes last year and undoubtedly these beetles came from larvae that had buried themselves in the asparagus last fall.

Wisconsin

E. P. Breakley (May 23): Beetles are beginning to appear.

Minnesota

A. G. Ruggles and assistants (May): The Colorado potato beetle has been reported from very abundant to moderately abundant in the southern third of the State.

Mississippi

R. W. Harned and assistants (May): The Colorado potato beetle is generally abundant throughout the State where spraying has not been carried on.

Alabama

J. M. Robinson (May 23): The Colorado potato beetle is very abundant throughout the State.

Oregon

D. C. Mote (April 29): The Colorado potato beetle is scarce in northeastern Oregon.

A BLISTER BEETLE (Enicauta lemniscata Fab.)

Louisiana

W. A. Douglas (May 9): The striped blister beetle, E. lemniscata, was found attacking Irish potatoes on a plantation near Crowley.

POTATO APHID (Uroleia solanifolii Ashm.)

Virginia

C. E. Gould (May 22): This insect is doing serious damage to tomato and eggplant. In several instances control measures have been applied.

Mississippi

M. M. High (May 25): Macrosiphum solanifolii was found at Gulfport for the first time by the writer in April, 1928, in a seed bed, but little injury was noted at the time to the crop after it had been transplanted. This season the lice are abundant and have done considerable injury to eggplant in the field.

POTATO LEAFHOPPER (Empoasca fabae Harr.)

New Jersey

H. B. Weiss (April 20): The potato leafhopper is generally distributed over the State in the usual abundance.

Minnesota

A. G. Ruggles and assistants (May): The potato leafhopper is reported moderately abundant over the southern third of the State, and very abundant from Morrison and Pipestone Counties.

Iowa

C. J. Drake (May 20): This insect is abundant and a serious pest over the entire State.

TURNIPS

GARDEN WEBWORM (Lomostega similalis Guen.)

Mississippi

R. W. Harned (May 23): Specimens identified by J. M. Langston as L. similalis were collected on April 23 at Lucedale, where they were infesting turnips.

GREEN PEACH APHID (Myzus persicae Sulz.)

Mississippi

R. W. Harned (May 17): Turnips badly infested with M. persicae were mailed from Savage on April 22.

CABBAGE

IMPORTED CABBAGE WORM (Pieris rapae L.)

New Hampshire

P. R. Lowry (May 14): The common cabbage butterfly seems to be more common than usual at this time of the year at Durham.

New York

Weekly News Letter, N.Y. State College of Agr., May: Cabbage butterflies were observed during the week of May 13 in Suffolk County.

Maryland

E. N. Cory (May 6): The imported cabbage worm has been reported from Prince George and Frederick Counties.

Wisconsin

E. P. Breakley (May 23): Adults of Pieris rapae are abundant.

Minnesota

A. G. Ruggles and assistants (May): The imported cabbage worm is reported as moderately abundant over the southern third of the State and very abundant from Tracy, Austin, and Chatfield.

Mississippi

R. W. Harned (May 23): Specimens of Pontia rapae were sent in from Wyattte on May 8 with the information that they were injuring cabbage.

K. L. Cockerham (April 20): This insect has been quite destructive to cabbage at Biloxi for several days. (April 25): Two 1-acre fields of cabbage at Picayune are heavily infested.

CULERY LOOPER (Autographa falcifera Kby.)

Haiti

R. C. Smith (May 6): The southern cabbage looper, Plusia simplex, has been particularly bad at Port-au-Prince lately. It has required constant spraying or dusting of cabbage to produce heads of any value whatever and even then some have been made worthless by these larvae and attendant decay.

CABBAGE MAGGOT (Hylemyia brassicae Bouche)

New York

Weekly News Letter, N. Y. State College of Agr., May: The cabbage maggot was reported as very numerous in Suffolk County the week of May 13. The fly was reported as beginning to lay eggs in Onondaga County the week of May 20 and in Chautauqua and Erie Counties the week of May 27.

CABBAGE APHID (Brevicoryne brassicae L.)

Virginia

G. E. Gould (May 22): This insect is moderately abundant and doing some damage, but not so abundant as last year. Most of the cabbage is harvested in time to escape serious injury.

North Carolina

C. H. Brannon (May 18): A large field of rape in Washington County has been completely destroyed by the cabbage aphid.

HARLEQUIN BUG (Murgantia histrionica Hahn)

Maryland

E. N. Cory (May 6): The harlequin bug appeared on April 8 in Dorchester County.

North Carolina

W. A. Thomas (May 20): Hundreds of nymphs are now feeding on mature seed pods of broccoli in the Chadbourn section. Adults are no longer abundant on these plants since the seed have matured, but nymphs are attacking the dry pods, evidently feeding on the seed within.

J. P. Metcalf (May 27): The harlequin bug is very abundant at Raleigh.

South Carolina

M. H. Brunson (May 18): The harlequin bug is very abundant.

Alabama

J. M. Robinson (May 20): The harlequin bug is occurring all over the State in great abundance.

Mississippi

R. W. Harned and assistants (May): This insect is moderately abundant in practically all parts of the State and reported as doing considerable damage at Buena Vista, Okolona, Morgan City, Jackson, Meridian, and many other places in the State.

Louisiana

W. A. Douglas (May 9): This insect was found numerous on Irish potatoes in a field near Crowley. This is an unusual occurrence and was witnessed by W. R. Walton and W. E. Halcy of the Bureau of Entomology.

CROSS-STRIPED CABBAGE WORM (Evergestis rimosalis Guen.)

Mississippi

K. L. Cockerham (May 6): This cabbage worm was found doing considerable damage to cabbage at Biloxi.

FLEA BEETLES (Phyllotreta spp.)

Mississippi

R. W. Harned (May 17): Flea beetles causing damage to cab-

boge were mailed from Hazelhurst April 22. The specimens were determined as P. zimmermanni Cr. and P. vittata discedens Weise by W. S. Fisher.

CABBAGE WEBWORM (Hellula undalis Fab.)

Texas

F. L. Thomas (May 16): Many specimens of the cabbage webworm were found in old plants of cabbage that were unmarketable and being plowed under in Webb County.

STRAWBERRY

A BUPRESTID (Chrysobothris pubescens Fall)

Washington

W. W. Baker (May 22): Larvae of C. pubescens were collected in strawberry crowns in White Salmon in 1928. This spring larvae have been taken in strawberry crowns in the Grand Mound district, where they appear to have been recognized by growers at least 4 years previously. Some growers have claimed that they have suffered severe losses of plants due to this beetle, to which they have been applying the name "horseshoe nail." It is undoubtedly serious when once established and it is thought that the occurrence in strawberry is very interesting since buprestids are commonly considered as wood borers. (A similar report was received from Oregon last November. J. A. H.)

STRIPED FLEA BEETLE (Phyllotreta vittata Fab.)

North Carolina

W. F. Thomas (May 15): These insects are very abundant on peppergrass in the vicinity of Chadbourn and where the plants occur in strawberry fields there seems to be an overflow to strawberry plants. The damage, however, to the latter is very slight.

PLAINS FALSE WIREWORM (Elcoides opaca Say)

South Dakota

H. C. Severin (May 13): The plains false wireworm is damaging strawberries severely at Clevrview.

RED SPIDER (Tetranychus telarius L.)

Maryland

E. M. Cory (May 6): The red spider is abundant on strawberry in Somerset County March 21.

ASPARAGUS

ASPARAGUS BEETLE (Crioceris asparagi L.)

South Carolina

M. H. Brunson (May 23): Asparagus in the vicinity of Denmark has been damaged considerably by the asparagus beetle.

Illinois C. C. Compton (May 15): This insect was very abundant in asparagus fields of Cook County May 13.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

Delaware H. L. Dozier (May 17): A single adult of the Mexican bean beetle was beaten from a peach tree at Bridgeville May 1. This is the first adult observed for this season, which is earlier than usual.

Maryland E. N. Cory (May 6): This insect emerged early, but returned to hibernation.

Virginia W. J. Schoene (May): The first adults of the Mexican bean beetle were found at Blacksburg May 23.

P. J. Chapman (May 22): The first beetle appeared in the field May 3, which is approximately the same time as last year. At that time (May 3) the earliest beans were coming into bloom. Very few beetles are in the field at present. The large commercial spring crop of snap beans is almost certain to escape injury this year, as some beans will be picked within a week. (May 24): Records to date from hibernation cages indicate that a large number of beetles survived the winter in eastern Virginia. Both second and third brood individuals show a survival on this date of approximately 40 per cent. Many beetles are now appearing in the fields and a few egg masses have been found. Snap beans are being picked in the vicinity of Norfolk. It appears that the large spring crop will escape important damage.

N. F. Howard (May 16): Mr. C. E. Gahn reported that 15 per cent of the beetles placed in hibernation cages at Arlington Farm in the fall of 1928 had already emerged, indicating high survival, and that heavy spring infestation may be expected in that section.

North Carolina C. H. Brannon (May 15): The Mexican bean beetle has made its appearance, but no serious damage has occurred.

South Carolina M. H. Brunson (May 23): This insect is becoming abundant in many bean fields in the eastern part of the State.

Ohio N. F. Howard (May 15-16): The first Mexican bean beetle was found in the field at Columbus on May 15, and at Athens May 16. There has been activity in the hibernation cages during warm periods for the past two weeks, but the recent cool weather has inhibited activity.

A correction - Referenced to this insect at Biloxi, Miss., in Vol. 9, No. 3, P-82, refers to Epilachna borealis Fab.

- Indiana J. J. Davis (May 23): The Mexican bean beetle has not appeared.
- Kentucky H. Garmon (May 4): An adult was noticed three weeks ago.
- Alabama J. M. Robinson (May 23): This insect is very abundant over all of the northeastern part of the State.
- New Mexico J. R. Eyer (May 21): Adults began appearing on May 20 on garden beans, but are very scarce.

BEAN LEAF BEETLE (Corotoma trifurcata Forst.)

- Virginia P. J. Chapman (May 22): Injury by this insect is conspicuous throughout the trucking areas. In some instances control is necessary, but none has been applied.
- North Carolina W. A. Thomas (May 17): This insect is doing the usual amount of damage to snap beans in the vicinity of Chadbourn. Some plants are riddled, while others are less seriously affected.
- Mississippi G. I. Worthington (May 23): The bean leaf beetle is attacking butter beans and snap beans in the vicinity of Shelby, Clarksdale, and Cleveland.

COMPEA WEEVIL (Chalcodermus aeneus Boh.)

- Alabama K. L. Cockerham (May 9): This insect was reported by Mr. S. C. Brummitt as severely injuring snap beans at Grand Bay on May 9. It was apparently puncturing the blossom buds, and the bean pods showed some indications of feeding.

BLACK BLISTER BEETLE (Epicauta pennsylvanica DeG.)

- Alabama K. L. Cockerham (May 9): A good many specimens of this beetle were forwarded by Mr. S. C. Brummitt on May 9 from Grand Bay, where he found them on snap beans. They were evidently doing some damage to the crop.

BEAN LEAF ROLLER (Goniurus proteus L.)

- Florida J. R. Watson and E. W. Berger (May 21): The bean leaf roller is moderately abundant over the State.

SOUTHERN GREEN STINK BUG (Nezara viridula L.)

- Alabama S. C. Brummitt (May 9): Quantities of these insects were found in a bean field at Grand Bay.

COTTON PLANT BUG (Adelphocoris rapidus Say)

- Mississippi R. W. Harned (May 23): Specimens of this insect were sent

from Moss Point on May 15 with the information that they were abundant on butter beans.

LEAFHOPPERS (Cicadellidae)

Haiti

R. C. Smith (May 6): A small green leafhopper has been found to cause a serious yellows disease of beans in Haiti. The disease makes the growing of beans, except at the highest altitudes, impossible except during the winter months. This leafhopper is very plentiful now. The disease also occurs on some allied plants. (Specimens have been sent to Dr. DeLong for determination.)

CUCUMBER

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Delaware

H. L. Dózier (May 17): Adults of the striped cucumber beetle were beaten from a peach tree at Bridgeville on May 1.

Virginia

P. J. Chapman (May 22): The striped cucumber beetle is moderately abundant on cucumber, squash, and cantaloupe.

Ohio

H. C. Mason (May 16): This insect was observed in the field at Columbus May 16.

Kentucky

H. Garman (May 4): A few of the striped cucumber beetles have been found.

Wisconsin

E. P. Breakey (May 23): Adults are beginning to appear.

Minnesota

A. G. Ruggles and assistants (May): The striped cucumber beetle is reported quite generally over the southern part of the State with scattered reports of severe abundance.

Missouri

L. Haseman (May 24): The beetles are slow in appearing at Columbia, the melons not being planted.

Alabama

O. T. Deen (May 9): This insect is causing 90 per cent damage to squash blooms at Grand Bay, there being from 10 to 20 beetles on each bloom.

J. M. Robinson (May 23): The striped cucumber beetle is very abundant throughout the State.

Mississippi

R. W. Harned (May 17): Inspector K. Harmon on April 22 observed cucumber beetles appearing in considerable numbers on orange trees. He sent 5 specimens to us, 4 of which proved to be D. vittata and the other D. duodecimpunctata. The striped cucumber beetle was reported during the last week of April as causing serious damage to watermelons in the vicinity of

Columbus. The larvae were abundant on the roots and the adults were feeding on the leaves. (May 23): Specimens of this beetle were sent from Mize on May 5 and Lena on May 10, with the information that they were causing serious injury to young watermelon plants.

P. K. Harrison (April 25): Many specimens of this insect have been received from Picayune, where they were attacking cucumber, squash, and watermelon.

MELONS

WESTERN STRIPED CUCUMBER BEETLE (Diabrotica trivittata Mann.)

Arizona

O. L. Barnes (May 18): This insect is attacking watermelons and cantaloupe plants in many fields in the Salt River Valley.

MELON APHID (Aphis gossypii Glov.)

Florida

J. R. Watson and E. W. Berger (May 21): The melon aphid is very abundant wherever melons grow in the State.

ONIONS

ONION THRIPS (Thrips tabaci L.)

New York

Weekly News Letter, N. Y. State College of Agr., May 13: The onion thrips have been observed in Suffolk County.

ONION MAGGOT (Hylemyia antiqua Meig.)

New York

Weekly News Letter, N. Y. State College of Agr., May 20: Onion maggots were laying eggs around onions May 16. Some eggs had hatched and the larvae were feeding on young onions in Orange, Genesee, and Orleans Counties, and first appeared in Suffolk and Erie Counties the last week in the month.

Illinois

C. C. Compton (May 15): Adults began emerging in small numbers May 10, which is normal for Cook County.

SUGAR BEET

BEET LEAFHOPPER (Eutettix tenellus Baker)

Idaho

C. Wakeland (May 21): In the main commercial beet-growing areas populations are light and beet planting early, and damage is not expected. In some of the natural breeding areas isolated from beet-raising districts the leafhopper is quite abundant and observations indicate that it has already passed one complete generation May 17.

Utah

G. F. Knowlton (May 13): The beet leafhopper is practically absent from the sugar-beet fields of northern Utah at the present time. This insect is fairly numerous on small areas of its breeding ground just west of Snowville and Promontory.

New Mexico

J. R. Eyer (May 21): The beet leafhopper is very abundant at State College and has been increasing in abundance since May 1. The females are now ovipositing.

Arizona

O. L. Barnes (May 20): This insect is moderately abundant.

Oregon

D. C. Mote (April 29): The beet leafhopper is moderately abundant in eastern Oregon. It invaded the Willamette Valley in 1926.

LETTUCE

APHIDS (Aphididae)

California

R. E. Campbell (April 20): There are 6,000 acres of lettuce approaching maturity in the Salinas Valley badly infested with Myzus persicae Sulz. and Macrosiphum kaltenbachii Shoudt. Aphid attacks in many cases result in sliming of the heads, rendering them worthless. Much of the remainder is reduced in quality by the damage or presence of aphids. Many infested fields will suffer a loss of 50 per cent. An additional 6,000 acres of young lettuce is also infested, mostly with migrating forms. Unless their control by natural or artificial means is effected this acreage will be severely damaged.

SQUASH

SQUASH BUG (Anasa tristis DeG.)

Maryland

E. N. Cory (May 6): This insect is out abundantly and as early as the last of March in Wicomico County.

Virginia

P. J. Chapman (May 22): Adults are present in moderate numbers, but no eggs observed.

North Carolina

J. N. Tenhet (May 15): The first squash ladybirds have begun to appear on squash at Chadbourn.

MINT

CRANE FLIES (Tipulidae)

Michigan

R. H. Pettit (May 22): Crane fly larvae have been reported very plentiful in some of the mint fields and some damage is being done. The leather jackets are beginning to pupate at this time, so the worst of the attack is over.

S O U T H E R N F I E L D - C R O P I N S E C T S

TOBACCO

TOBACCO FLEA BEETLE (Epitrix parvula Fab.)

North Carolina C. H. Brannon (May 15): The tobacco flea beetle has caused very severe damage all over the tobacco sections. Many beds and fields of tobacco have been almost completely destroyed.

Kentucky H. Garman (May): This insect is abundant in plant beds.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

North Carolina W. A. Thomas (May 25): Growers report serious injury by this insect feeding on the stems and foliage of tobacco plants at Evergreen. In some instances midribs of leaves have been eaten so as to cause the leaf to break and drop.

TOBACCO WIREWORM (Monocrepidius vespertinus Fab.)

North Carolina J. N. Tenhet (May 15): Injury to tobacco near Chadbourn by M. vespertinus has been very widespread the past three weeks, but is about over for the season.

TOMATO WORM (Protoparce sexta Johan.)

North Carolina J. N. Tenhet (May 28): The first tobacco hornworms are beginning to appear on tobacco at Chadbourn.

Florida F. S. Chamberlin (May 14): Infestations on tobacco are about normal in Gadsden County for this time of the year.

TOBACCO BUDWORM (Heliothis virescens Fab.)

North Carolina J. N. Tenhet (May 25): The tobacco budworm has appeared in the tobacco fields near Chadbourn much earlier than usual this spring.

A SLUG (Agriolimax campestris Binney)

North Carolina Z. P. Metcalf (April 19): The little slug which has done much widespread damage in the southeastern section of this State to tobacco plant beds has been identified by Dr. F. C. Baker of the University of Illinois as A. campestris. Many plant beds in the southeastern part of the State have been completely destroyed.

SUGARCANE

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana T. E. Holloway and W. E. Haley (May 16): The sugarcane moth borer was found in very small numbers, causing dead hearts in sugarcane in Jefferson Parish.

W. E. Hinds (May 29): Sugarcane borers hibernated fairly successfully. The first generation is now reaching the adult stage and the second generation is just starting. Some fields show heavy infestations, but the general condition appears below average.

PINK SUGARCANE BORER (Microplacon cosmion Dyar)

Louisiana T. E. Holloway and W. E. Haley (May 16): Two specimens of the pink borer of sugarcane, M. cosmion, were found in young sugarcane plants in Jefferson Parish.

LESSER CORN STALK BORER (Elasmopalpus lignosellus Zell.)

Louisiana T. E. Holloway and W. E. Haley (May 16): This insect was found injuring sugarcane in Jefferson Parish.

F O R E S T A N D S H A D E - T R E E I N S E C T S

PERIODICAL CICADA (Tibicinia septendecim L.)

Iowa H. E. Jaques (May 31): The periodical cicada (Brood III) was first found in the adult stage May 28 at Mt. Pleasant, Henry County. Nymphs and their "chimneys" have been abundant for two months or more.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Indiana J. J. Davis (May 28): Bags were reported abundant on May 3 at Brownville in a 3-year-old orchard.

Mississippi R. W. Harned (May 23): Specimens were received from Hattiesburg on May 15 with the information that a rose bush was heavily infested.

GLOOMY SCALE (Chrysompholus tenebrioides Comst.)

North Carolina C. H. Brannon (May 23): Soft maple trees all over eastern North Carolina are very severely damaged by this scale.

Mississippi J. E. McEvilly (May 22): This scale is very abundant on oak trees at Laurel and it is also doing some damage to pecan trees at Moselle.

ASH

ASH BORER (Podosesia fraxini Lugger)

South Dakota

H. C. Severin (May 1): The ash borer is the most destructive insect to ash that we have, damage being very severe. It is more plentiful where rainfall is 15 inches per year or less.

BANDED ASH BORER (Neoclytus caprea Say)

Nebraska

M. H. Swenk (May 21): The banded ash borer was discovered and sent in by the Dodge County correspondent on May 7.

CEDAR

DEODAR WEEVIL (Pissodes deodarae Hopk.)

Mississippi

R. W. Harned and assistants (May): Adult weevils identified by J. M. Langston as P. deodarae were collected on Cedrus deodara plants and Arizona cypress at McComb May 2 and at Lexington May 11, and also in Leflore and Attala Counties. Twigs evidently injured by this species were also received from McComb on May 7. No specimens were in the twigs.

CHESTNUT AND HAZELNUT

WEEVILS (Curculio spp.)

Virginia

F. E. Brooks (May): Beetles of the lesser chestnut curculio, C. auriger Cas., and the hazelnut curculio, C. obtusus Blanch., that have developed from larvae infesting the host nuts in the summer and autumn of 1927 issued from the ground May 10 to 15. The chestnut-attacking species seems more abundant than usual.

ELM

ELM COCKSCOMB GALL (Colopha ulmicola Fitch)

Maryland

J. A. Hyslop (May 18): About 10 per cent of the leaves on small nursery trees (American elm) at Avenel bear these galls, never more than one gall to a leaf.

A FLEA BEETLE (Haltica ulmi Woods)

Massachusetts

J. V. Schaffner, Jr. (May 25): A representative of the Brookline Forestry Department brought in specimens on May 16. He reported three trees of elm badly infested and the adults were feeding on the unfolding leaves.

FIR AND SPRUCE

LONG SPRUCE CONE GALL (Chermes coolayi Gill.)

Washington

W. W. Baker (May 22): This insect is quite general throughout the western part of the State on Douglas fir and Sitka spruce.

DOUGLAS FIR CATERPILLAR (Euschausia argentata Pack.)

Washington

W. W. Baker (May 22): Holisidota argentata is more prevalent on Douglas fir and other conifers in western Washington than it was in 1928. It is maturing earlier this year than last.

HICKORY

HICKORY PHYLLOXERA (Phylloxera coryaeaulis Fitch)

North Carolina

C. H. Brannon (May 25): Hickory trees in Raleigh are covered with the galls of the hickory phylloxera.

JUNIPER

CEDAR BARK BEETLE (Phloeosinus dentatus Say)

Nebraska

M. H. Swenk (May 21): During the last week in April the cedar trees in a Lancaster County cemetery were found seriously infested with the red cedar bark beetle.

LOCUST

LOCUST BORER (Cyllene robiniae Forst.)

Maryland

E. N. Cory (May 6): This insect was reported from Baltimore on February 26.

MAPLE

SUGAR-MAPLE BORER (Glycobius speciosus Say)

North Carolina

C. H. Brannon (May 23): Flacionotus speciosus is causing serious injury to a grove of sugar maples in Caraway, Randolph County.

WOOLLY MAPLE LEAF APHID (Pemphigus acerifolii Riley)

North Carolina

Z. P. Metcalf (May 27): The woolly maple louse is abundant in the eastern part of the State.

COTTONY-MAPLE SCALE (Fulvinaric vitis L.)

South Carolina M. H. Brunson (May 23): Maple trees in many parts of the State are heavily infested with the cottony-maple scale.

Alabama J. M. Robinson (May 23): This insect has been reported from Hackleburg.

OAK

TWO-SPOTTED CURCULIO (Attelabus bipustulatus Fab.)

West Virginia F. E. Brooks (May): Adults of a leaf-rolling weevil, Attelabus bipustulatus, are common at French Creek, rolling the leaves of laurel oak, Quercus imbricaria.

A correction - The note on Asterolecanium variolosum Ratz. by R. B. Friend on page 88 of this volume of the Bulletin, where the species was reported as attacking "chestnut and oak" should have read as attacking "chestnut oak."

OAK LECANIUM (Lecanium quercifex Fitch)

Alabama J. M. Robinson (May 23): This insect was reported from Cedar Bluff.

ROUGH BULLET FALL (Disholcaspis mamma Walsh)

Mississippi R. W. Harned (May 23): Galls on oak identified by E. P. Felt as D. mamma were collected on March 23 at Calhoun City.

PINE

WHITE-PINE WEEVIL (Pissodes strobi Peck)

Maine C.R. Phipps (May 21): The white-pine weevil is very abundant and destructive.

New Hampshire P. R. Lowry (May 17): The white-pine weevil was common at Durham on May 10, copulating and feeding.

RED TURPENTINE BEETLE (Dendroctonus valens Lec.)

New Hampshire P. R. Lowry (May 17): This insect is common in white pine logs and stumps cut this winter. The first eggs were found today (Durham).

NANTUCKET PINE MOTH (Rhyacionia frustrana Comst.)

Mississippi R. W. Harned (May 23): On May 6 a correspondent at Cleveland sent to us some pine twigs that contained pupae of what is ap-

parently R. frustrana. He reported that the larvae had caused damage to the new growth of some small shortleaf pine trees. Larvae tentatively identified as R. frustrana were sent in on April 15 from Matchez with the information that they were causing serious injury to some young slash pine trees.

SCOTCH PINE LECANIUM (Toumeyella munismaticum P. & McD.)

Minnesota

A. G. Ruggles (May): This insect is very abundant on Jack pine, Scotch pine, and mugho pine in Ramsey County.

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

Nebraska

M. H. Swenk (May 21): The pine leaf scale was noted hatching from overwintered eggs on May 9 and is still hatching. Complaints of injury were received from several localities, especially Omaha and Lincoln.

PINE BARK APHID (Chermes pinicorticis Fitch)

Maryland

E. N. Cory (May 6): This insect appeared in Caroline County on May 8.

POPLAR

SATIN MOTH (Stilpnotia salicis L.)

Washington

T. W. Baker (May 22): Satin moth larvae were found feeding on poplars in Olympic early in May. It has not been recorded previously south of Tacoma.

POPLAR LEAF MINER (Lithocolletis tremuloidella Braun)

Wyoming

H. L. Sweetman (May 15): This insect had not started to pupate May 15.

COTTONWOOD LEAF BEETLE (Lina scripta Fab.)

Mississippi

R. W. Harned (May 23): Larvae of Melasma scripta were sent in on April 25 from Noston with the information that they were abundant on cottonwood trees. Larvae collected on poplar trees were sent in from Lucedale on May 2.

WILLOW

EUROPEAN WILLOW BEETLE (Plagiodera versicolora Laich.)

Delaware

H. L. Dozier (May 18): The imported beetle P. versicolora (determined by H. S. Barber) is very abundant at Newark, attacking a great many varieties of willow, and they are present in such large numbers that they are rapidly defoliating trees.

Prof. C. O. Houghton states that he observed this insect at Newark for the first time in the spring of 1928, at which time it was abundant.

ALDER FLEA BEETLE (*Haltica bimarginata* Say)

Washington

W. W. Baker (May 22): The alder flea beetle was quite abundant on willow early in May.

INSECTS ATTACKING GREENHOUSE
AND ORNAMENTAL PLANTS

SMALL GREEN ROSE APHID (*Myzus rosarum* Kelt.)

Chic

E. W. Mendenhall (May 3): The cape jasmine in one of the greenhouses in Springfield is very badly infested with the green aphid, M. rosarum.

GREENHOUSE LEAF TYER (*Phlyctaenia ferrugalis* Hbn.)

Connecticut

J. F. Johnson (May 24): This insect seems to be more generally prevalent this year than last at Shelton as I have had a dozen or more complaints, whereas last year I had none.

BOXWOOD

BOXWOOD LEAF MINER (*Monarthropalpus buxi* Leduc.)

Washington

C. F. Doucette (May 22): Ornamental box in a nursery near Seattle is very heavily infested with the boxwood leaf miner. This infestation was discovered by the Seattle district inspector and specimens were brought to this laboratory for identification. Adults were emerging in the nursery on May 18. This infestation is the first instance recorded in the Pacific Northwest as far as is known.

Delaware

H. L. Dozier (May 17): Adults of the boxwood leaf miner started to issue at Wilmington on May 8.

BOXWOOD PSYLLID (*Psyllia buxi* L.)

Washington

W. W. Baker (May 22): The boxwood psyllid has been reported from several localities in western Washington and is probably general throughout the vicinity of Puyallup. It has been causing considerable injury this year.

CANNA

LESSER CANNA LEAF ROLLER (Geshna cannalis Guaint.)

Mississippi

E. W. Harned (May 13): Specimens of the lesser canna leaf roller were sent in on May 16 from McComb, with the information that they were seriously injuring cannas.

CHRYSANTHEMUM

CHRYSANTHEMUM GALL MIDGE (Diarthronomyia hypogaea Loew)

Ohio

E. W. Mendenhall (May 4): The chrysanthemum midge has been the cause of a continued fight in the greenhouses in Springfield. Many of the houses are wholesale houses and ship chrysanthemum stock to a number of States and Canada. Some of the houses in Springfield are comparatively free from the midge.

EUONYMUS

EUONYMUS SCALE (Chionaspis euonymi Comst.)

Delaware

F. I. Doster (May 17): The euonymus scale was very abundant in April.

IRIS

IRIS BORER (Macronoctua onusta Grote)

Ohio

E. W. Mendenhall (May 27): I find the iris borer in the iris plants again in Columbus and vicinity. They were reported quite bad last year.

LILAC

LILAC LEAF MINER (Gracilaria syringella Tob.)

Washington

C. E. Doucette (May 33): Several lilacs around Puyallup and Sumner are severely infested with the mines of the lilac leaf miner. Rolling of the leaves has not started yet.

MARCISSUS

BULB MITE (Rhizoglyphus hyacinthi Banks)

Ohio

E. W. Mendenhall (May 11): I find the narcissus bulbs in plantations in Miami and Montgomery Counties infested with the bulb mite to some extent.

KNOT-LEGGED BULB FLY (Eumerus tuberculatus Rond.)

Washington

C. F. Doucette (May 22): The first adult was observed in the field May 7 near Sumner. This is much later than in 1928. To date (May 21) all adults captured in the field have been E. tuberculatus.

OLEANDER

OLEANDER APHID (Aphis nerii Fons.)

Arizona

O. L. Barnes (May 10): The oleander aphid is very abundant on tender terminal growth of oleander in the Salt River Valley.

PHLOX

YUCCA PLANT BUG (Halticotoma valida Reut.)

Mississippi

R. W. Harned and assistants (May): Leaf bugs identified by J. K. Longston as H. valida were sent in on April 30 from Aberdeen with the information that they "have appeared on Yucca plants and are causing injury to perennial phlox near by." Specimens of this species were also collected on Yucca plants at Kosciusko May 8 and at Durant on May 23.

ROSE

ROSE SAWFLY (Caliroa aethiops Fab.)

Maryland

J. A. Hyslop (May 24): Rose slugs are more numerous in my garden at Anavel than I have observed them in years. They are rapidly skeletonizing the leaves of hybrid teas and climbing roses.

Ohio

Ohio

E. W. Mendenhall (May 27): The rose slug, Endelomyia rosae is quite bad on some of the climbing roses in Columbus and vicinity.

Kentucky

H. German (May): The rose slug Selandria rosae is becoming common.

ROSE LEAF BEETLE (Nodonota puncticollis Say)

Maryland

J. A. Hyslop (May 15): These beetles are so numerous in all kinds of roses at Anavel as to practically ruin every blossom. As many as 28 beetles were collected in a single flower.

A BEETLE (Diplotaxis frondicola Blanch.)

Mississippi

R. W. Harned (May 17): A correspondent at Brookhaven sent specimens on May 2 with the following comments: "They have completely destroyed one of my rose bushes by eating the foliage and buds. They keep every particle of green eaten off. They work at night and in the mornings I find them just under the soil near the roots of the rose bushes." (Determined by J. M. Longston.)

ROSE APHID (Macrosiphum rosae L.)

Ohio

E. W. Mendenhall (April 30): I find the rose aphids are beginning to put in their appearance. (May 27): The rose aphid is doing considerable damage to bush honeysuckle at Columbus.

SPINY ROSE GALL (Rhodites bicolor Harr.)

North Carolina

C. H. Brannon (May 4): The spiny rose gall, R. bicolor, was sent in from Carthage, where it was attacking rose.

SUMAC

SUMAC FLEA BEETLE (Blepharida rhois Forst.)

Missas

R. L. Parker (April 26): The sumac flea beetle is very numerous on smoke bush (Rhus cotinus) and sumac (R. glabra) at Manhattan. The adults are eating newly emerged leaves of smoke bush and many egg masses are on sumac. Adults are gouging into buds and destroying them.

I N S E C T S A T T A C K I N G M A N A N D

D O M E S T I C A N I M A L S

MOSQUITOES (Culicinae)

New Hampshire

P. R. Lowry (May 17): Mosquitoes have become exceedingly common in the woods near Durham during the last week, the principal species being Aedes communis DeG., A. trichurus Dyer, and A. excrucians Walk.

FLEAS (Ctenocephalus spp.)

General

F. C. Bishopp (May 25): A number of reports of infestations of houses by fleas, C. canis Curt. and C. felis Bouche, have been coming in during the past month. The reports emanate from various sections of the country, Pa., N.Y., Kan., and Wash., comprising the list of States from which complaints have been received.

A GNAT (Hippelates sp.)

Arizona

F. C. Bishopp (May 25): On April 18 a few specimens of this species were seen buzzing about the faces of people in Tucson. Some report that on certain days during the last two weeks these gnats have been annoying to man.

California

F. C. Bishopp and D. C. Parman (May 25): On April 16 this species was present in moderate numbers and beginning to cause much annoyance to residents of the Coachella Valley. Infested eyes, especially among the school children, are quite commonly seen, although every effort is being made to reduce this trouble.

BUFFALO GNAT (Prosimulium pecuarum Riley)

Nebraska

M. H. Swenk (May 21): Prosimulium pecuarum was reported as very prevalent in the vicinity of North Platte, Lincoln County, about the middle of May.

CATTLE

HORN FLY (Haematobia irritans L.)

Maryland

H. S. Peters (May 25): Horn flies were observed rather numerous for the first time on May 14.

North Dakota

F. C. Bishopp (May 25): The first horn fly was observed on a bull at North Dakota Agricultural College on May 13.

Missouri

L. Haseman (May 24): The horn flies are becoming quite abundant.

NORTHERN CATTLE GRUB (Hypoderma bovis DeG.)

Idaho

F. C. Bishopp (May 25): During the month of May specimens of this species have been received from the following localities in Idaho: Bennington and Ovid, Bear Lake County; Gannett, Blaine County; Samuels, Bonner County. These constitute the first records of this species for the State.

SHORT-NOSED OX LOUSE (Haematopinus eurysternus Nitz.)

Nebraska

M. H. Swenk (May 21): During the third week in April a correspondent from Thomas County reported sucking lice to be very prevalent on his cattle.

DOG

BROWN DOG TICK (Rhipicephalus sanguineus Latr.)

Texas

F. C. Bishopp and F. A. Fenton (May 23): On April 19 dogs belonging to a resident of El Paso were found considerably an-

noyed by the attack of this tick. Specimens of the tick were also causing some trouble by crawling up the walls of rooms and giving rise to large numbers of seed ticks in cracks above the baseboards and windows.

POULTRY

EUROPEAN HEN FLEA (Ceratophyllus gallinae Schrank)

Pennsylvania

F. C. Bishopp (May 25): An infestation of a chicken house by the European hen flea was reported from West Grove on May 3.

BUFFALO GNATS (Simuliidae)

Alabama

J. M. Robinson (May 23): Buffalo gnats attacking chickens were reported from West Blockton and Ethelsville. Midges attacking turkeys were reported from White Hall and attacking poultry at Le Pine.

PIGEON HIPPOBOSCID (Lynchia maura Bigot)

South Carolina

F. C. Bishopp (May 25): On March 29 a large commercial pigeon plant was experiencing considerable trouble from the pigeon fly. As many as 8 flies were found on a single squab, and the number is said to increase considerably as the weather becomes warmer.

Florida

F. C. Bishopp (May 25): Several reports of infestations in Florida have been received during May. These came from Lockhart, Daytona, and Miami.

California

F. C. Bishopp (May 25): On May 9 a report of an infestation of pigeons by this insect was received from Arcadia. The statement is made that it is becoming more abundant each year.

Puerto Rico

F. C. Bishopp (May 25): On April 12 a pigeon fancier from San Jose reported that his birds have been annoyed by the pigeon fly for the past two or three years.

HOUSEHOLD AND STORED -

PRODUCTS INSECTS

TERMITES (Reticulitermes spp.)

Maryland

E. N. Cory (May 6): A report of termite damage was received from Baltimore on March 16.

Indiana

J. J. Davis (May 28): During the month a number of reports of white ant troubles have been received. This pest is prevalent throughout the State and causing serious losses.



THE INSECT PEST SURVEY BULLETIN

A periodical review of entomological conditions throughout the United States
issued on the first of each month from March to December, inclusive.

Volume 9

July 1, 1929

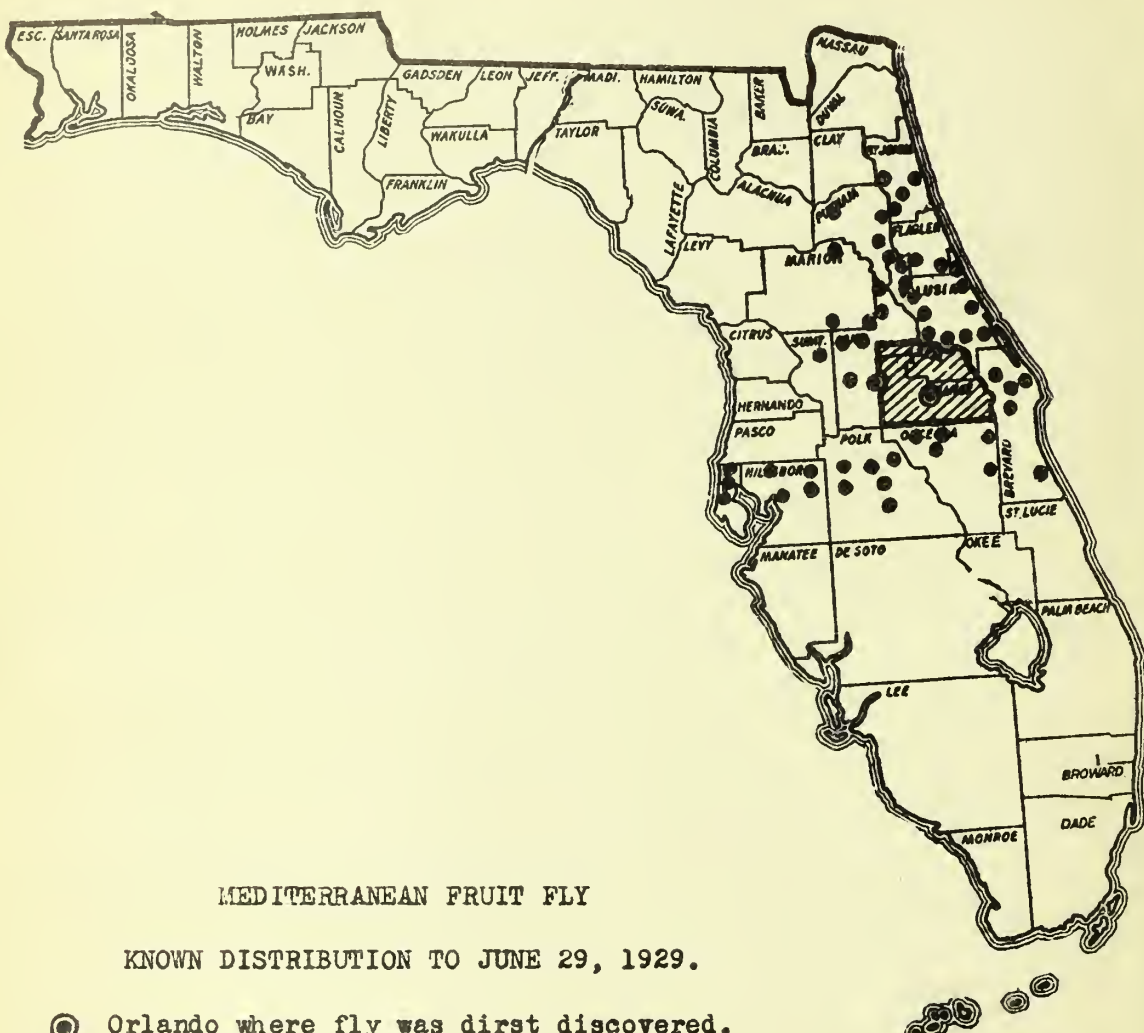
Number 5

BUREAU OF ENTOMOLOGY
UNITED STATES
DEPARTMENT OF AGRICULTURE
AND
THE STATE ENTOMOLOGICAL
AGENCIES COOPERATING





THE UNIVERSITY OF CHICAGO LIBRARY
100 EAST 57TH STREET
CHICAGO, ILL. 60637
TEL. 773-936-5000



MEDITERRANEAN FRUIT FLY

KNOWN DISTRIBUTION TO JUNE 29, 1929.

● Orlando where fly was first discovered.

Shaded area first quarantined by the State Plant Board of Florida.

● Subsequently determined infestations.

INSECT PEST SURVEY BULLETIN

Vol. 9

July 1, 1929

No. 5

OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR JUNE, 1929.

The Mediterranean fruit fly has been found at a considerable number of new lightly infested points outside of the generally infested district in Florida during the month of June. These extend the known infested district northeastward to St. Johns County and southwestward to the Gulf near Tampa. In this number of the Survey Bulletin is a map indicating the known infestation and a statement of the situation.

Save for a rather intense infestation in central Nebraska, grasshoppers are attracting but little attention this month. In the Gulf States the eastern lubber grasshopper is doing considerable damage in scattered localities.

Accounts of wireworm damage have been received from practically all parts of the United States during the month and are occasioning considerable concern in parts of New York, Pennsylvania, South Carolina, Nebraska, and Washington.

In the Middle Western States white grubs are very scarce, but reports of serious defoliation by May beetles have been received from practically all of the upper Mississippi Valley and the North Central States.

Cutworm damage has been generally very severe over practically the entire United States east of the Rocky Mountains. A large area extending over southeastern South Dakota, southwestern Minnesota, and northeastern Iowa seems to be a center of most serious depredations.

The wheat straw worm has developed a general outbreak over the greater part of Kansas.

The fall armyworm is now epidemic from Georgia to Mississippi. Many thousands of acres of crops, especially on overflowed land, have been entirely destroyed.

Damage by the corn ear worm is beginning to appear as far northward as Kansas and Delaware.

The seed corn beetle did considerable damage in central counties in Illinois and was reported as occurring in great numbers in Nebraska.

The range caterpillar (Hemileuca oliviae Ckll.) is seriously damaging some of the most valuable range land in northeastern New Mexico. Fifteen years ago a similar outbreak occurred in this region.

The rosy apple aphid has developed during the month to be more abundant in the Middle Atlantic States than it has been in many years. Similar conditions are reported from Arkansas.

The codling moth promises to be more abundant than usual in central and western Illinois and about normally abundant over the remainder of the eastern apple-growing sections.

Damage by the plum curculio is generally severe from New Hampshire to Georgia along the Atlantic coast. West of this region the curculio seems to be less troublesome than usual.

The filbert bud mite (Eriophyes avellanae Nal.) has been discovered in Stamford, Conn. Heretofore this insect has been known in the United States only in Oregon, where it is a pest of considerable importance.

The seed corn maggot is very serious in the North Central States eastward to northern New York and is also very prevalent in many parts of California.

The Mexican bean beetle is more destructive in Alabama than any year since its discovery in the State. It is occasioning serious damage throughout its entire present known range.

Brood III of the periodical cicada is appearing quite generally over the district in Iowa and Illinois known to be inhabited by this brood.

The gypsy moth seems to be more seriously prevalent in New England than it has been for several years.

GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

- Florida J. R. Watson (June 23): Grasshoppers are moderately abundant, which is the usual condition all over Florida. The eastern lubber grasshopper (Romalea microptera Beauv.) is the most troublesome, especially in the south.
- Louisiana H. Spencer (June 25): The eastern lubber grasshopper was very abundant around Baton Rouge June 25.
- Mississippi R. W. Harned (June 24): The eastern lubber grasshopper was abundant around the shrubs in a yard at Columbus June 3.
- Wisconsin E. L. Chambers (June 21): Melanoplus atlanis Riley is moderately abundant in the northeastern counties. Camnula pellucida Scud. is moderately abundant also in this section.
- North Dakota J. A. Munro (June 25): Grasshoppers (Melanoplus bivittatus Say and other species) were present in small numbers at Mandan, Morton County, June 20, but at Garrison, Burleigh County, they were abundant and noticeable injury to crops was apparent.
- Nebraska M. H. Swenk (May 15-June 15): Grasshoppers were hatched and already doing damage in the alfalfa and small grain fields, especially oats, by the first of June. One Brown County correspondent reported the loss of 10 acres of oats on May 26 and 27, with a threat of the loss of the entire field. In Dawson County by June 10 they were getting numerous in the alfalfa fields and threatening serious damage.

WIREWORMS (Elateridae)

- New York C. R. Crosby (June 13): Wireworms did much damage to peas in sandy soil in Chautauqua County.
- Pennsylvania C. A. Thomas (June 22): Larvae of an undetermined species of Melanotus was found in association with Pheletes agonus Say in Philadelphia and Bucks Counties on young beets, cabbage, lettuce, newly planted lima beans, and some garden flower roots during May and June. The adults were common in late May and early June, feeding on the flower heads of rhubarb.
- South Carolina M. H. Brunson (June 25): Horistonotus uhleri Horn is very abundant on corn, peas, cotton, etc., at Brunson.
- Nebraska M. H. Swenk (June): Melanotus fissilis Say is moderately abundant in eastern Nebraska. The present spring has been one marked by considerable damage by wireworms. This damage showed up most strongly during the last week of May. Damage was most severe in stream-bottom cornfields, and M. fissilis seemed to be the chief depredator in these fields.

Washington

M. C. Lane (May 27): Wireworms have been active during this month attacking early seed potatoes and spring seeded onions. More or less damage has been reported upon nearly all garden truck crops around Walla Walla. Adults have been active since April 1st., with peak of flight about first week in May. Adults of Pheletes canus Lec. were obtained from blossoms of young cherry and pear trees where some feeding damage was noticed. Thousands of this species were collected from seed heads of rhubarb for our rearing work at the laboratory. Emergence of P. occidentalis Cand. was less numerous than of P. canus, and practically no feeding by this species was noted. Other species of wireworm adults collected this spring are Melanotus oregonensis Lec., Ludius inflatus Say, Dolopius lateralis Esch., Cardiophorus tenebrosus Lec., and Pheletes venablesi Wick.

WHITE GRUBS (Phyllophaga spp.)

Illinois

C. C. Compton (June): Adults of Phyllophaga fusca Froel. were observed in heavy flights May 28, 29, 30, and 31, in Cook County. Many oak groves or scattered oaks in pastures throughout central and north-central Illinois have been almost completely defoliated.

Wisconsin

E. L. Chambers (June 21): White grubs are scarce, but beetles are very abundant, defoliating many oak, poplar, elm, and other trees in spots.

Minnesota

A. G. Ruggles and assistants (June): Although June beetles are being observed in large numbers, white grubs are very scarce in the fields this year.

Iowa

C. J. Drake (June): Adults are from moderately to very abundant in the eastern part of the State.

H. E. Jaques (May 31): Adult May beetles seem to have been delayed in making their appearance this spring but during the past 10 days or two weeks have more than made up for lost time. Their choice food plants are fairly covered with them on warm nights, and timber and shade trees, as well as many rose bushes, are suffering severely in defoliation. At least 10 species are represented in those that are now out.

Nebraska

M. H. Swenk (May 15-June 15): Adult May beetles of several species have been flying abundantly during the period here covered, presaging a return of serious white-grub conditions in 1930.

JAPANESE BEETLE (Povillia japonica Newm.)

Virginia

R. J. Haskell (June 18): Dr. Haskell, of the

Bureau of Plant Industry, called up to inform us that employees of his office visiting Fort Myer had heard reports of injury there by the Japanese beetle.

BERTHA ARMYWORM (Barathra configurata Walk.)

North Dakota

J. A. Munro (June 25): June 16 is the earliest record taken of the emergence of the bertha armyworm.

CUTWORMS (Noctuidae)

Pennsylvania

C. A. Thomas (June 22): Cutworms have been very injurious in certain localities in southeastern Pennsylvania during early June. Tobacco has been injured in Lancaster County and beets have suffered some in certain fields in Bucks County. Several cornfields have been badly injured, the loss in one field amounting to about 20 per cent of the plants. The cutworms in this field were almost all Agrotis ypsilon Rott.

Indiana

J. J. Davis (June 27): Agrotis ypsilon Rott. has been reported destructive in Gibson County along the Wabash River in overflowed areas. The granulated cutworm Feltia annexa Treit. damaged corn at Rennselaer, June 22.

Wisconsin

E. L. Chambers (June 20): Many reports are being received to the effect that Oligia fractilinea Grote is again doing serious injury to patches of corn along fence rows and ditches.

Minnesota

A. G. Ruggles and assistants (June): Cutworms are reported from moderately abundant to very abundant in nearly every county in the southern third of the State, and at Ivanhoe, Lincoln County, gardens have been almost completely destroyed where poison was not used.

North Dakota

J. A. Munro (June 25): Porosagrotis orthogonia Morr. is reported to be causing serious injury to flax, corn, and other crops in Hettinger, Adams, Grant, Morton, Oliver, Stark, and Dunn Counties, all of which are west of the Missouri River. All specimens received from that section are this species.

South Dakota

H. C. Severin (June 24): Several species of cutworms did an enormous amount of damage to garden and truck crops. Chorizagrotis auxiliaris Grote was the principal species present. Injury is now subsiding.

Iowa

C. J. Drake (June): Cutworms are from moderately to very abundant over the entire State.

Nebraska

M. H. Swenk (May 15-June 15): The outstanding injury to field crops during the period here covered was the depredation of various cutworms to young corn. Thousands of acres of corn had to be replanted because of the destruction of the young

plants. Although the condition was general throughout the corn-growing portions of Nebraska, it was especially severe in northeastern Nebraska in an area including the Platte Valley. These injuries were most intense from May 20 to June 5.

Kansas

J. W. McColloch (June 6): Cutworms have caused some injury to corn at Sabetha and Dellvale. (June 11): Prodenia ornithogalli Guen. has caused some injury to corn in a field in Morris County.

Mississippi

R. W. Harned (June 24): A correspondent at Conehatta, Newton County, sent to us on June 15 specimens of Prodenia eridania Cram. with the information that they were eating the leaves and small tomatoes on her tomato plants. On May 28, County Agent C. G. Steele, of Clarksdale, sent specimens of Prodenia ornithogalli Guen. to this office with the report that they were doing quite a lot of damage to young cotton in his section. On May 29 a correspondent at Crawford reported the same insect eating the leaves of cotton.

Arizona

O. L. Barnes (June 24): Feltia annexa Treit. and other species are very abundant at Buckeye.

General

C. N. Ainslie (June 3): Further investigations of cutworm infestation reveals the fact that a large area extending over southeastern South Dakota, southwestern Minnesota, and northeastern Iowa has this year an abnormal number of cutworms of varying sizes that are doing great injury to both garden and field crops. Some cornfields have the worms present in nearly every hill and farmers are compelled to replant. A lot of 150 worms submitted for identification showed Euxoa messoria Harr. the dominant form present.

ARMYWORM (Cirphis unipuncta Haw.)

New York

Weekly News Letter, N. Y. State College of Agr., June 24: Armyworms are very thick in some hay fields and have forced many to harvest their hay prematurely.

Pennsylvania

T. L. Guyton (June 26): I am sending larvae which I have identified as armyworms. They were collected on oats and wheat in Lancaster County on June 20.

Indiana

J. J. Davis (June 27): The armyworm damaged corn at Greensburg (June 10).

CEREAL AND FORAGE - CROP INSECTS

WHEAT

WHEAT STRAW WORM (Harmolita grandis Riley)

Kansas

J. W. McColloch (May 29): Recent surveys in the State indicate that we are to have a rather heavy outbreak of the wheat straw worm. This insect has been found abundant in eastern Kansas, and also throughout the major wheat belt of the State which takes in the central portion. The adults of the second brood are now emerging in the field and in some cases as many as 4 females were found depositing in a single wheat stem. (June 20): A general outbreak of this insect has developed over most of western Kansas. Farmers are reporting as high as 50 per cent of the stems infested.

CORN

FALL ARMYWORM (Laphygma frugiperda S. & A.)

Georgia

O. I. Snapp (June 25): A very heavy infestation has just started in one cornfield in the eastern part of Peach County and the northern part of Houston County. Considerable damage has been done to late-planted corn, 100 per cent of the plants being ruined in one field where corn followed wheat that was turned under after hail and wind damage.

Alabama

J. M. Robinson (June 25): The fall armyworm is particularly destructive on the young corn in the lowlands. I visited 1,000 acres of corn a week ago where there were from 1 to 50 larvae on each stalk. This land had been submerged all of the month of March, except 5 days, to a depth of from 10 to 50 feet of water. The prison farmers were dusting the corn to save it. The same insect had caused considerable damage in Baldwin and Mobile Counties a month ago. Many thousand acres are damaged in the river lowlands and 800 on the prison farm. Reports have been received from Montgomery County, Elmore, Greensboro, Atmore, Baker Hills, and Bay Minette.

Mississippi

State Plant Board of Mississippi (June 24): An outbreak of southern grassworms on corn in Oktibbeha County has just been reported by County Agent R. M. Lancaster. The worms are working rapidly and many fields of corn will be ruined within a short time unless poison is applied.

R. W. Harned (June 19): On June 5, Inspector H. Gladney, Ocean Springs, wrote as follows: "The southern grassworms were very abundant here about two weeks ago. I know of seven

fields of corn where they occurred. About 5 acres of a 20-acre field were completely destroyed. The corn was knee-high and was eaten to a stub about 3 inches high. Three acres of a 10-acre field were destroyed. The worms did considerable damage in other fields." (June 24): The southern grassworm was reported injuring corn in Yazoo, Kemper, George, Adams, Madison, and Oktibbeha Counties during the past few weeks. Grass was found infested at Picayune on June 13.

Louisiana

H. Spencer (June 25): An extensive outbreak of grassworms on sugarcane at Houma. On June 20 the worms were maturing and were pupating in large numbers. In several fields the sugarcane leaves have been stripped to midribs.

CORN EAR WORM (Heliothis obsoleta Fab.)

Delaware

H. L. Dozier (June 24): The corn ear worm was reported as working in the buds of young corn from 5 to 6 inches high at Newark on June 17.

Kansas

G. A. Dean and J. W. McCulloch (June): The corn earworm is moderately abundant; damage by the first brood is beginning to appear.

Mississippi

R. W. Harned (June 24): Complaints of corn ear worm injury came in large numbers the last month. Vetch, corn, tomatoes, and cotton are among the crops injured in Meridian, Kewanee, Raleigh, Belzoni, Perkinson, Crenshaw, and Newton.

Louisiana

H. Spencer (June 25): The corn ear worm is very abundant in late-planted corn generally.

Arizona

O. L. Barnes (June 24): This insect is abundant in all fields of sweet corn examined; considerable injury found in some fields.

STALK BORER (Papaipema nebris nitela Guen.)

Maryland

F. M. Wadley (May 31): Several larvae of this insect were found injuring young corn at Silver Spring. The larvae were less than half grown. Injury has been noticed for about two weeks.

Indiana

J. J. Davis (June 27): The common stalk borer was frequently reported throughout the month beginning with the first report from Whitland June 1.

Illinois

W. P. Flint (June 19): As has been the case for the past several years, this insect is attracting considerable attention. A number of cases have been reported of injury to corn, potatoes, and flowering plants.

Wisconsin

E. L. Chambers (June 21): The stalk borer is moderately abundant, destroying patches of corn along the fence rows and ditches in the southern counties. It seems to be more abundant than last year.

Kansas

J. W. McColloch (June 20): The stalk borer is apparently going to be a pest of considerable importance again this year.

SOD WEBWORMS (Crambus spp.)

Indiana

J. J. Davis (June 27): Sod webworms were reported damaging corn early in June at Manila, Columbus, and Osgood.

Illinois

W. P. Flint (June 19): Sod webworms have been general over the northern half of the State. Damage was not quite so severe as last year in most cases reported.

Iowa

C. J. Drake (June): Sod webworms have done a considerable amount of injury to corn in the southern half of the State. When billbugs are present in the same fields, growers frequently attribute the work entirely to the billbugs and overlook the large populations of sod webworms.

GARDEN WEBWORM (Loxostege similalis Guen.)

Kansas

J. W. McColloch (June 11): Serious injury to corn by the garden webworm is reported from a few fields of corn in the southern part of Morris County.

Mississippi

R. W. Harned (June 24): Specimens of garden webworms were collected on butterbeans at Cleveland on June 3, and on cotton at Leota Landing on the same date, but very little injury was reported.

LARGER CORN STALK BORER (Diatraea zeacolella Dyar.)

Florida

J. R. Watson (June 23): The larger corn stalk borer has been unusually abundant in western Florida.

Alabama

J. M. Robinson (June 25): The larger corn stalk borer has done quite a bit of damage to corn in central and southern Alabama, infestations varying from 5 to 50 per cent. Reports received from the following places: Ozark, Greenville, Troy, Andalusia, Columbia, and Loachapoka.

SEED CORN BEETLE (Agonoderus pallipes Fab.)

Illinois

W. P. Flint (June 19): These beetles have caused considerable damage in the central counties.

Nebraska

M. H. Swenk (May 15-June 15): The seed corn beetle which was reported as appearing in great numbers during the first week in

April, did not do so much harm to planted seed corn as was anticipated. Nevertheless, one Butler County correspondent on May 20 reported that the seed in a portion of his cornfield had been destroyed by these beetles.

GRAPE COLASPIS (Colaspis brunnea Fab.)

Alabama

J. M. Robinson (June 25): We have had another interesting insect activity in the form of the chrysomelid Colaspis brunnea in the Tennessee Valley, where a substation has been recently established. There were about 120 acres of lespedeza that had been on the land for some three years. This spring the superintendent had his land turned and decided to plant experimental plots of corn, cotton, oats, and many of the common garden vegetables, as well as soy beans. The larvae proceeded to girdle the main root stems of all the plants, except oats, potatoes, and tomatoes. The cotton has been planted three or four times. Adults are emerging on the old field of lespedeza and will soon be emerging from the plot fields as well.

Louisiana

T. E. Holloway and W. E. Haley (May 24): A beetle which is undoubtedly Colaspis brunnea was found damaging corn in St. Charles Parish. It was feeding on the tender leaves.

BLUE-GRASS BILLBUG (Sphenophorus parvulus Gyll.)

Nebraska

M. H. Swenk (May 15-June 15): The timothy billbug had so injured a field of young corn in Washington County by May 25 that the owner had to replant the field.

North Carolina

C. H. Brannon (June 10): Billbug damage to corn has been especially bad in the coastal plains sections of the State.

CORN-SILK BEETLE (Luperodes varicornis Lec.)

Mississippi

R. W. Harned (June 24): Specimens tentatively identified by J. M. Langston were reported as eating corn silk at Tylertown on June 8 and at Brandon on June 22. They were also abundant on flowers at Tylertown.

SLENDER SEED CORN GROUND BEETLE (Clivina impressifrons Lec.)

Illinois

W. P. Flint (June 19): These beetles have caused considerable damage in the central counties.

CORN ROOT APHID (Anuraphis maidi-radicis Forbes)

South Carolina

M. H. Brunson (May 31): Anuraphis maidi-radicis has seriously damaged corn and cotton at Ridgeville.

RANGE GRASS

RANGE CATERPILLAR (*Hemileuca oliviae* Gll.)

New Mexico

I. R. Walton and V. L. Wildermuth (June 19): An outbreak of the range caterpillar is in progress in the northeastern counties of New Mexico east of the Rocky Mountains. The principal counties involved are Colfax, Union, Mora, and San Miguel, where many thousands of acres of the best cattle range in the State are severely infested. In a recent survey conducted by the Bureau fertile eggs of the species were found abundantly present with a very low percentage of parasitism. Fifteen years ago a disastrous outbreak of this insect occurred here which destroyed or rendered inedible large areas of the valuable gramma grass range. There is every indication that a recurrence of this condition is now in progress. Owing to the cold, backward spring that prevailed in the region this year, the eggs were late in hatching, but it is expected that by August severe injury by the range caterpillar will occur in most of the counties mentioned.

ALFALFA AND CLOVER

CLOVER LEAF WEEVIL (*Hypera punctata* Fab.)

Delaware

H. L. Dozier (June 13): Dr. J. F. Adams reports about half of a 15-acre field of young lima beans badly injured by the clover leaf weevil and the clover root curculio near Ellendale June 5. From 25 to 35 per cent of the stand of 4 to 5 inch plants were destroyed. This field was in clover which was plowed under this spring.

ALFALFA WEEVIL (*Phytonomus posticus* Gyll.)

Nevada

G. C. Schweis (June 21): The cold weather has retarded oviposition over the State.

BEET ARMYWORM (*Laphygma exigua* Hubn.)

Arizona

O. L. Barnes (June 24): An insect, probably *L. exigua*, was reported by Mr. J. L. E. Lauderdale as doing serious injury to alfalfa in Yuma County. The same species was also attacking young cotton plants in a near-by field.

FRUIT INSECTS

APPLE

APHIDS (Aphididae)

- Massachusetts A. I. Bourne (June 24): Fruit aphids are scarce to moderately abundant and beginning to become abundant in some orchards.
- Michigan R. H. Pettit (June 22): All sorts of aphids are very abundant.
- Minnesota A. G. Ruggles and assistants (June): Fruit aphids are reported as very abundant in Brown and Hennepin Counties, and moderately abundant at a number of other points in the southern part of the State.
- North Dakota J. A. Munro (June 25): Aphids have been unusually abundant on cherry, plum, dogwood, boxelder, lilac, and willow trees this season. Observations made at Fargo, Mandan, and Bismarck, and reports sent in to this office through the mail would indicate that these insects are widespread and more abundant than usual throughout the State.
- Iowa H. E. Jaques (May 31): Aphids of many species are unusually abundant this year and their food plants are suffering in consequence.
- Nevada G. C. Schweis (June 21): Fruit aphids have been noticed on apple, peach, and plum at Reno.

APPLE APHID (Aphis pomi DeG.)

- New York C. R. Crosby and assistants (June): Early in the month these insects were becoming abundant on the terminal growth in the western part of the State, and by the middle of the month they were increasing so rapidly as to occasion measures for their control.
- Virginia W. J. Schoene (June 22): In some commercial orchards the green aphid has curled the leaves on a few tips of apples. No great damage has been caused. It appears that the aphids are present in smaller numbers than previously.

ROSY APPLE APHID (Anuraphis roseus Baker)

- Connecticut W. E. Britton and assistants (June): The rosy apple aphid is very abundant. This insect is less abundant in the eastern part of the State and reported as leaving the apple trees in Hartford County. It is more abundant than last month in New Haven and other localities.

W York

C. R. Crosby and assistants (June): In the western part of the fruit belt the rosy apple aphid hatched in greater numbers than it has in many years and threatens very serious losses over the greater part of the fruit belt. Hatching commenced about the first week in April and by the first week in June it had spread quite generally over the orchards.

ansas

B. A. Porter (June 21): From a letter from A. J. Ackerman, May 4. "We are having a rather bad outbreak of the rosy apple aphid at Bentonville this spring. More damage has been done to date than in any previous season. Each season this insect seems to become more abundant. The first aphids were found on March 31 and since that time we have had continuous cold, wet weather so that parasites and predators have not started to work."

APPLE GRAIN APHID (Rhopalosiphum prunifoliae Fitch)

consin

E. L. Chambers (June 22): Very abundant on apple throughout the apple-growing sections.

CODLING MOTH (Carpocapsa pomonella L.)

W York

C. R. Crosby and assistants (June): Codling moth adults were observed during the first week of the month in the Hudson River Valley, by the middle of the month they were emerging in the upper Lake Region, and by the end of the month sideworm injury was seen in Orange County.

th Carolina

C. H. Brannon (June 25): Codling moth injury is rather severe in the mountains.

linois

W. P. Flint (June 19): The present indications are that the codling moth is more abundant than usual in the central and west-central Illinois orchard sections, and that the second brood will start hatching in southern Illinois about June 3 or 4. The start of the hatch will be quite a little later in central Illinois.

S. C. Chandler (June): Larvae were found under bands at Carbondale June 5; first pupation was observed June 12.

C. C. Compton (June): This insect is moderately abundant in Cook County; emergence was two weeks late and irregular.

consin

E. L. Chambers (June 21): This insect is moderately abundant in the southern counties.

inesota

A. G. Ruggles and assistants (June): The codling moth was reported as very abundant during the first two weeks of June in Hennepin, Martin, and Meeker Counties.

Missouri

L. Haseman (June): In central Missouri the peak of the first-brood moth emergence occurred between May 27 and June 10. The greatest abundance of worm entrance was expected to appear around June 15, and most of the worms have now (June 25) entered the fruit. The earliest first-brood worms are full fed and a few have begun to pupate.

Nebraska

M. H. Swenk (May 15-June 15): The over-intering larvae reached their maximum of pupation on May 23. The first spring-brood moths appeared on May 19 and the maximum of the emergence of this brood was on June 9. The first eggs of the first brood were laid June 13. This corresponds closely to these same events in 1928, when they occurred on May 24 and 25 and June 8 and 15.

Kansas

B. A. Porter (June 21): From a letter from P. M. Gilmer, Wichita, May 31. "Worms are just beginning to show up. The first injury in the field was noted on May 27, one day later than last year. A very small part of the first brood is this far advanced. I expect the heavy hatch about June 3 or 4. Hatching worms seem to lack vigor. We have found 10 or 12 fruits of which fully 50 per cent had dead larvae in them. I rather think that the cold May, together with the remains of our calyx spray lead arsenate is accountable for the dead worms. The eggs for this section were laid May 17 and none of the larvae were over 24 hours old when found."

Arkansas

B. A. Porter (June 21): Letter from A. J. Ackerman, Bentonville, June 7. "Most of the moths of the spring brood have emerged. It has rained almost every day since before bloom and the first brood of worms will be light. We had 10 inches of rain last month and it has rained hard every day this month."

EASTERN TENT CATERPILLAR (Melacosoma americana Fab.)

New Hampshire

P. R. Lowry (June 25): The eastern tent caterpillar moderately abundant. Nearly all had pupated on June 21 at Durham.

Connecticut

J. E. Britton (June 22): This insect is much less abundant than last month throughout the State. A moderate number of nests were started and were not completed. Cold weather in April and May was unfavorable for the young caterpillars.

FRUIT TREE LEAF ROLLER (Archips argyrospila Walk.)

New York

C. R. Crosby and assistants (June): Although this insect is doing considerable damage in a few orchards, it is not abnormally abundant in either the Lake fruit belt or the Hudson River Valley.

Michigan

R. H. Pettit (June 21): The fruit tree leaf roller is present in unusual numbers about half way up the State on the west shore. The larvae are well grown and doing severe injury. As usual, they fail to respond to arsenical sprays.

PISTOL CASE BEARER (Coleophora malivorella Riley)

West Virginia

B. A. Porter (June 21): There was an outbreak of the pistol case bearer in an apple orchard near Charlestown this spring. The case bearers were so abundant that a large percentage of the blossom buds were killed before opening and a great deal of defoliation has occurred since.

APPLE AND THORN SKELETONIZER (Hemierophila pariana -Clerck)

New Hampshire

P. R. Lowry (June 25): The apple and thorn skeletonizer is common in the southern third of the State, doing considerable damage to unsprayed trees in some localities.

LEAFHOPPERS (Cicadellidae)

Virginia

W. J. Schoene (June 22): The conspicuous leafhopper in the Virginia orchards just at the present is the yellowish leafhopper, Typhlocyba pomaria McAtee. The nymphs have all matured and the adults are mating.

Minnesota

A. G. Ruggles and assistants (June): Apple leafhoppers have not yet put in their appearance over the greater part of the State. Several counties, however, have reported them as moderately abundant and reports from Hennepin and Martin Counties indicate that they are very abundant.

Massachusetts

J. I. McColloch and G. A. Dean (June): Apple leafhoppers are moderately abundant, especially on nursery stock.

BUFFALO TREEHOPPER (Ceresa bubalus Fab.)

Wisconsin

E. L. Chambers (June 20): During the past three years this pest has been appearing in increasing numbers and doing serious damage to young fruit trees throughout the State, but particularly in Kewaunee, La Crosse, Brown, and Manitowish Counties, where sweet clover is being used as a cover crop in the orchards.

APPLE FLEA WEEVIL (Orchestes pallicornis Say)

Ohio

J. S. Houser (June 18): The apple flea weevil is unusually prevalent and destructive in Ohio this season. Noticeable commercial injury has been observed at Lorain, which is quite near the Lake. We have also received a number of reports that this insect is noticeably abundant as far south as the Ohio River. The Delaware section, however, remains the center

of infestation and some orchards in this area are very severely damaged. At this time the summer brood of beetles is appearing.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Florida J. R. Watson (June 23): The red-headed scale fungus, Sphaerostilbe auranticola, is controlling the San Jose scale very well.

Ohio E. W. Mendenhall (June 17): I note the first movement of the young San Jose scale June 10, infesting flowering crab apple in one of the parks in Springfield. The infestation is quite bad on susceptible plants in the parks in Springfield. On account of the prolonged cool weather the movement of the scale is somewhat later in this latitude. Percentage of survival of the scale in Ohio is perhaps a little higher than usual.

Wisconsin E. L. Chambers (June 20): The severe weather of last winter appeared to have greatly checked this pest, which is only present in seven counties in the southern part of the State and there in small numbers.

Kansas J. W. McColloch and G. A. Dean (June): The San Jose scale is very abundant in areas where it occurs.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

New York Weekly News Letter, N. Y. State College of Agr., June 3: Ontario County. The oyster-shell scale began hatching on May 27.

Michigan R. H. Pettit (June 22): This insect is very abundant.

Minnesota A. G. Ruggles and assistants (June): The oyster-shell scale is quite generally abundant over the southern third of the State and increasing rapidly. It has been reported as very abundant from Hennepin, Waseca, Mower, and Fillmore Counties.

COTTONY-CUSHION SCALE (Icerya purchasi Mask.)

New York Weekly News Letter, N.Y. State College of Agr., June 10: Niagara County. Several cottony-cushion scales with egg masses were found in the Lake Zone orchards the third week in May.

PEAR

PEAR PSYLLA (Psyllia pyricola Foerst.)

New York C. R. Crosby and assistants (June): A large number of pear

psylla eggs were laid in western New York and the Hudson River Valley. The warm weather toward the end of the month was accompanied by a rapid increase in the psylla, which, though threatening, has not yet done much damage.

PEAR MIDGE (Contarinia pyrivora Riley)

Massachusetts

A. I. Bourne (June 24): Reports have been received of outbreaks in Plymouth County and in the north-central part of the State. Serious in some orchards, but infested areas are not extensive.

New York

C. R. Crosby and assistants (June): Pear midge infestations seem to be quite general in the Hudson Valley, in some cases as high as 25 per cent of the fruit being infested.

PEACH

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

Connecticut

P. Garman (June 24): Judging from the amount of early twig injury in New Haven and Hartford Counties, there will be fully as much damage to fruit as occurred last year.

North Carolina

R. W. Leiby (June 19): This insect is present on peaches in the usual numbers throughout the State, but is feeding in midseason ripening peaches, which is rather unusual.

Georgia

O. I. Snapp (June 20): The infestation in the middle Georgia peach belt is light.

Florida

E. W. Mendenhall (June 12): I find quite a severe outbreak on peach in Miami County.

Illinois

S. C. Chandler (June): The first moths of the second brood emerged at Carbondale on June 3, and eggs were found on the leaves, some ready to hatch, on June 14. Practically all of the larvae of the first brood have left the twigs and no new entrances can be found. The first-brood infestation was generally light.

Tennessee

A. C. Morgan and assistants (June 26): The oriental fruit moth is severely injuring a 3-year-old peach orchard near Clarksville, as many as 10 to 15 larvae being found on most of the trees.

Alabama

J. M. Robinson (June 22): Moderately to very abundant at Anniston, Bessemer, Birmingham, and Auburn.

Mississippi

R. W. Harned (June 24): The oriental peach moth has been

received recently from Pike, Alcorn, and Prentiss Counties. Dr. M. R. Smith also reported observing injury to peach trees in Lowndes and Clay Counties.

PLUM CURCULIO (Conotrachelus nemuphar Hbst.)

New Hampshire

P. R. Lowry (June 25): On June 14 an average of from 8 to 10 beetles were jarred from small peach trees at Wilton.

Connecticut

M. P. Zappe (June 22): There are about the usual number of adults. The apple crop is less than usual, therefore the curculio appears to be doing more damage over the State.

New York

C. R. Crosby and assistants (June): The plum curculio seems to be more abundant than usual this year; in fact, in the lower part of the Hudson River Valley the growers believe that it is more abundant than it has ever been.

Delaware

H. L. Dozier (June 13): The curculio infestation appears to be the heaviest since 1921. Large numbers of the mymarid Anaphoidea conotracheli Girault are now being reared from eggs of the curculio at Camden.

North Carolina

R. W. Leiby (June 19): Ripening peaches and early midseason varieties show heavier infestation by far than usual. Indications are for heavy losses by the curculio in late varieties. The peak of the first-brood adult emergence was June 10 in our commercial sandhill peach section.

Georgia

O. I. Snapp (June 20): Second-generation larvae have started to appear in the Fort Valley section. The infestation is heavy where curculio control measures have not been properly enforced.

Illinois

S. C. Chandler (June): The orchards in southern Illinois show a lighter infestation than last season. A cold, rainy spring has prevented some feeding. Jarring in sprayed and unsprayed orchards showed a gradual increase in numbers occurring on peach up to June 1, the peak. Since then there has been a considerable falling off until the present time, June 14.

Michigan

R. H. Pettit (June 22): The plum curculio is very abundant.

Missouri

L. Haseman (June): This insect emerged late. Larvae are one-half grown and a few full fed. It is now moderately abundant and causing severe damage.

Alabama

J. M. Robinson (June 25): This insect is moderately abundant at Auburn and Fairfield.

CHERRY

BLACK CHERRY APHID (Myzus cerasi Fab.)

York

C. R. Crosby and assistants (June): This insect is so numerous in Ulster, Monroe, Niagara, and Oswego Counties that the crop has been materially reduced. It is also reported as being very abundant in Ontario, Genesee, Orange, Chautauqua, and Dutchess Counties.

consin

E. L. Chambers (June 21): This insect is very abundant on cherry over the State.

UGLY-NEST CATERPILLAR (Cacoecia cerasivorana Fitch)

England

J. V. Schaffner, jr. (June 25): Ugly-nest caterpillars are common to abundant on wild cherry and choke cherry in eastern Massachusetts. We have reports of it being abundant in Burlington, Lowell, and Woburn, Mass., and Bucksport, Me., and also from many localities in southern New Hampshire.

ryland

F. E. Brooks (June 24): On June 14, nests of this insect were observed covering choke cherry and other plants along the roadside near Accident. The nests were very conspicuous and the caterpillars occurred in great numbers. In many cases the masses of web entirely covered small apple trees and other bushes, and was being spread over grass and alfalfa plants. At least 33 species of plants were being attacked. These included choke cherry, apple, viburnum, primrose, wild plum, and alfalfa. The infestation extended about a mile along the highway.

DARK CHERRY FRUIT FLY (Rhagoletis fausta O. S.)

e York

C. R. Crosby and assistants (June): The first adult was taken from trap cages in Ulster County June 3, in Chautauqua County June 6, in Columbia County June 10, and in Erie County June 12, and by the 20th of the month the peak of emergence had been reached in the western part of the State.

Michigan

R. H. Pettit (June 19): The dark cherry fruit fly commenced to emerge at Gobles this morning. Thus far Michigan has found R. fausta in that one location alone. R. cingulata Loew infests the rest of the cherry belt.

PEACH BARK BEETLE (Phthorophloeus liminaris Harr.)

ew York

Weekly News Letter, N. Y. State College of Agr., June 10: Niagara County. A rather severe infestation of the peach bark beetle was found in a small planting of both sweet and sour cherries recently.

RASPBERRY

RASPBERRY FRUIT WORM (Byturus unicolor Say)

New York

C. R. Crosby and assistants (June): In the lower Hudson River Valley this insect caused very considerable damage to red raspberries. It was also reported as doing appreciable damage in Erie and Wayne Counties.

Wisconsin

E. L. Chambers (June 20): There has been a general complaint from this pest for the past two years and many inquiries are being received for control measures.

Minnesota

A. G. Ruggles and assistants (June): The raspberry Byturus has been reported.

GRAPE

GRAPE FLEA BEETLE (Haltica chalybea Ill.)

New York

C. R. Crosby and assistants (June): The grape flea beetle is very abundant on grapes in Yates County and in parts of Chautauqua County.

Ohio

E. W. Mendenhall (June 3): The larvae are found feeding on the leaves of the grapevines in Columbus and vicinity. They are feeding very greedily and damage is being done.

GRAPE CURCULIO (Craponius inaequalis Say)

West Virginia

F. E. Brooks (June 24): The grape curculio is abundant at French Creek on vines of cultivated and wild grapes. The feeding marks are conspicuous on the leaves and oviposition in the fruit had begun on June 20. Indications point to a serious attack.

GRAPE PLUME MOTH (Oxyptilus periscelidactylus Fitch)

Massachusetts

A. I. Bourne (June 24): This insect is more abundant than usual, many complaints having been received from small growers.

J. V. Schaffner, jr. (June 25): This insect caused considerable alarm during the last of May in the vicinity of Melrose and Wakefield. In one section of Revere, where many grapes are grown and severe pruning is practiced, no larvae could be found.

CURRANT AND GOOSEBERRY

IMPORTED CURRANT WORM (Pteronidea ribesii Scop.)

Wisconsin

E. L. Chambers (June 20): Our nursery inspectors are find-

ing this pest quite generally destructive this summer on currant and gooseberry.

Nebraska M. H. Swenk (May 15-June 15): The imported currant worm was very injurious to gooseberry and currant bushes during the period from May 28 to June 8 all over the eastern part of the State, westward, in the Platte Valley, to Kearney and Buffalo Counties.

CURRANT STEM GIRDLER (Janus integer Nort.)

New York C. R. Crosby and assistants (June): This insect is very abundant in some plantings in Chautauqua County and is also doing some damage in Orange County.

CURRANT APHID (Myzus ribis L.)

Wisconsin E. L. Chambers (June 20): Currant bushes seemed to be quite generally infested with this pest this summer in the southern part of the State.

BLACK VINE WEEVIL (Brachyrhinus sulcatus Fab.)

New York Weekly News Letter, N.Y. State College of Agr., June 3: Orange County. The roots of gooseberry bushes are being injured by B. sulcatus.

CHESTNUT AND HAZELNUT

A WEEVIL (Balaninus auriger Casey)

West Virginia F. E. Brooks (June 24): Beetles issued from the soil about the middle of May. Their numbers indicate a heavy infestation next autumn of the few remaining chestnuts at French Creek.

Maryland F. E. Brooks (June 24): Adults were found in numbers on the catkins of Japanese chestnuts at Denton on June 7.

HAZELNUT WEEVIL (Balaninus obtusus Blanch.)

West Virginia F. E. Brooks (June 24): Beetles issued from the soil at French Creek late in May and early in June. A normal infestation of hazelnut is indicated.

FILBERT BUD MITE (Eriophyes avellanae Nal.)

Connecticut A. L. Quaintance (May 14): A letter from E. P. Felt reads as follows: "Mr. Bartlett has been growing filberts at Stamford for some years, and you may be interested in learning that the filbert bud mite of Europe is generally present, not only on Mr. Bartlett's bushes, but also on those of Dr.

Morris. In the case of the former, the mites may destroy as much as 25 per cent of the buds. The infestation is indicated by buds twice the normal size which fail to develop and finally dry up and drop off."

Oregon

A. L. Quaintance (June 8): Dr. Ewing informs me that the filbert bud mite has heretofore been known only from Oregon, where it is a pest of considerable importance.

WALNUT

BLACK WALNUT CURCULIO (Conotrachelus retentus Say)

West Virginia

F. E. Brooks (June 24): Beetles are ovipositing in the young fruits of the black walnut.

BUTTERNUT CURCULIO (Conotrachelus juglandis Lec.)

Pennsylvania

F. E. Brooks (June 24): Eggs and larvae were found in the leaf stems and tender shoots of Japanese walnut in a nursery on June 5. Injury was not serious, although oviposition was still under way.

PECAN

FALL WEBWORM (Hyphantria cunea Dru.)

Georgia

O. I. Snapp (June 25): "A moderate infestation of pecan was observed today in several groves at Valdosta and Perry.

Alabama

J. M. Robinson (June 24): The fall webworm is attacking pecans over the southern and central parts of the State.

Mississippi

R. W. Harned (June 24): This insect was reported as very abundant and injuring pecan, hickory, persimmon, sweet gum, and other trees in all sections of the State.

PHYLLOXERA (Phylloxera spp.)

Mississippi

R. W. Harned (June 24): A great many complaints have been received during the past month regarding the abundance of Phylloxera galls on pecan trees. The specimens sent to this office for identification have proved to be either Phylloxera devastatrix Perg. or P. notabilis Perg. These specimens came from Warren, Panola, Pike, Bolivar, Copiah, Coahoma, Lowndes, and Madison Counties.

ALMONDS

CLOVER MITE (Bryobia praetiosa Koch)

California

Monthly News Letter, Los Angeles County Horticultural Commission, Vol. 11, No. 6, June 15: Almond orchards in the Antelope Valley have experienced one of their heaviest infestations of almond mites this spring. The Palm Ranch near Palmdale, which has some 200 acres of almonds, had an exceptionally heavy infestation. The mites had very favorable weather conditions for working.

CITRUS

MEDITERRANEAN FRUIT FLY (Ceratitis capitata Wied.)

General

Plant Quarantine and Control Administration (June 29): During the month the fruit fly has been found in many new localities and is now known to occur in the following fourteen counties: Orange, Seminole, Lake, Osceola, Brevard, Volusia, Flagler, St. Johns, Putnam, Marion, Sumter, Polk, Hillsboro, and Pinellas.

During June, infested fruit which came from Florida has been found at the following three places: Fort Worth, Tex., Raleigh, N. C., and Little Rock, Ark. (in addition to lot included in last report). All of this infested fruit was discovered between the first and sixth of the month, and although the inspection force has been greatly increased during June no other infested shipments have been reported.

In carrying out the eradication program outlined in the first edition of the federal quarantine, and included in subsequent editions of the state quarantine, host fruits and vegetables in the infested zones ^{are} being destroyed and the removal of noncitrus hosts in the surrounding protective zones is under way. As required by the quarantine regulations, shipment of citrus fruits of the present crop from the entire State of Florida (except limes from Monroe and Dade Counties and other citrus fruit from approved cold storage plants) terminated on June 15. The shipment of other host fruits and vegetables from the protective zones, except those for which special extension (in some cases to June 30) was made, has been discontinued for the summer and fall.

California

Monthly News Letter, Los Angeles County Horticultural Commission, Vol. 11, No. 6, June 15: The Mediterranean fruit fly survey is now well under way in southern California, and plans for the project's organization were laid at a meeting in Los Angeles of all horticultural commissions of the southern counties. At a prior meeting of state and county officials, Mr. D. B. Mackie, State entomologist, was chosen to direct a State-side survey for the presence of the fly.

WOOLLY WHITEFLY (Aleurothrixus howardi Quaint.)

Florida

J. R. Watson (June 23): The woolly whitefly is more common than for several years, but no commercial damage is being done. The parasite, Eretmocerus haldemani Howard apparently is not so efficient as usual.

A LEAF BEETLE (Trirhabda brevicollis Lec.)

Mississippi

R. W. Harned (June 24): Specimens of this insect were sent to this office on June 18 from Gulfport with the information that they had been injuring the foliage of orange trees.

CALIFORNIA RED SCALE (Chrysomphalus aurantii Mask.)

Texas

F. L. Thomas (June 25): The California red scale is very abundant in most of the Lower Rio Grande Valley.

T R U C K - C R O P I N S E C T S

SEED CORN MAGGOT (Hylemyia cilicrura Rond.)

New York

C. R. Crosby and assistants (June): This insect has been extremely destructive this spring to cucumbers and melons in Wayne, Niagara, Erie, and Chautauqua Counties.

Michigan

R. H. Pettit (June 19): I am sending today specimens of a fly that looks just like the adult of the bean maggot, from pickle fields at Holland, where they are reported to be present by the thousands. A year or two ago we bred adults of the bean maggot from cucumber plants in that district. (Determined by C. T. Greene.)

Wisconsin

E. L. Chambers (June 20): This insect is becoming a serious pest to corn and beans in many sections of the State, and each year more inquiries are being received concerning its control. Within the past month reports have been received from Racine, Kenosha, Milwaukee, Grant, Eau Claire, and La Crosse Counties.

Minnesota

A. G. Ruggles and assistants (June): Although a few records of injury to seed corn and seed potatoes have been received, this insect, on the whole, is attracting but little attention.

Iowa

C. J. Drake (June): The seed corn maggot is doing some commercial damage to onions in the vicinities of Davenport and St. Ansgar. The injury is confined largely to seedlings and the smaller onions. Other notes have been received during the month of attacks on corn and onions.

California

E. O. Essig (June 16): This insect is unusually common and destructive this spring to planted beans, corn, melons, etc., in many parts of the State.

C. K. Fisher (June 1): This insect was first reported by A. O. Larson on May 2 attacking beans. On May 31 a farmer from Modesto brought in sprouted blackeye beans which were badly damaged. He reported that many fields were badly damaged and that one farmer did not have more than a 5 per cent stand.

SOUTHERN GREEN STINK BUG (Nezara viridula L.)

Florida F. S. Chamberlin (June 22): The southern green stink bug is abundant and causing damage to tobacco in Gadsden County.

Mississippi R. W. Harned (June 24): The southern green stink bug was puncturing young tomatoes at Picayune and Carriere and causing them to fall May 24, and reports of injury to peas and beans were received from Lucedale on June 20.

MOLE CRICKETS (Scapteriscus spp.)

North Carolina B. B. Fulton (June 25): Scapteriscus acletus R. & H. is apparently increasing in abundance; it is causing injury to truck seedlings only in the southeastern corner of the State, but ranges as far north as White Lake, Willard, and Jacksonville.

South Carolina H. H. Brunson (May 27): Scapteriscus sp. has been very abundant and has damaged garden crops extensively at Lake City.

THRIPS (Thysanoptera)

New York Weekly News Letter, N. Y. State College of Agr., June 24: Suffolk County. Thrips are beginning to appear in the cauliflower seed beds. Genesee & Orleans Counties. Thrips are present in large numbers on Texas set onions.

GARDEN SLUGS (Mollusca)

Delaware E. L. Dozier (June 13): Injury by the striped garden slug Limax maximus L. to cultivated pansies and Dianthus at Wilmington was reported May 22.

Ohio E. W. Mendenhall (June 3): The garden slug Agriolimax agrestis L. is doing considerable damage to garden crops again this spring at Columbus.

POTATO AND TOMATO

ASH-GRAY BLISTER BEETLE (Macrobasis unicolor Kby.)

North Carolina R. W. Leiby (June 19): This blister beetle is seriously injuring Irish potato vines at several points in the western

(mountain) section of the State. We know this species only from the mountains in this State. Complaints in previous years were received in June and July.

Mississippi

R. W. Harned (June 24): This blister beetle was reported as causing serious injury to Irish potatoes at Dorsey on June 10.

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

Pennsylvania

C. A. Thomas (June 22): The Colorado potato beetle has been very common in certain localities in southeastern Pennsylvania this summer, feeding on potato, tomato, and eggplant.

Maryland

F. M. Wadley (May 30): Adults have been seen occasionally in the last two weeks at Silver Spring, and today some small larvae were observed.

Florida

J. R. Watson (June 23): The Colorado potato beetle is moderately abundant on wild Solanum, as potatoes are gone.

Illinois

C. C. Compton (June): The Colorado potato beetle is moderately abundant in Cook County; hatching began June 10.

Minnesota

A. G. Ruggles and assistants (June): This insect is now putting in its appearance throughout the potato-growing sections of the State, and is already abundant in Hennepin, Blue Earth, Sibley, Aitkin, and Itasca Counties.

Wisconsin

E. L. Chambers (June 21): This insect is moderately abundant generally, but worse in Portage County, where spraying is not done with traction sprayers.

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

Maryland

F. M. Wadley (June 1): Small black flea beetles were injuring potatoes at Silver Spring the middle of May.

Minnesota

C. G. Gaylord (June 12): The potato flea beetle is very abundant at Luverne, Rock County.

TOMATO STALK WEEVIL (Trichobaris mucorea Lec.)

Arizona

O. L. Barnes (June 24): This insect has been observed and reported in potato stalks in several plantings near Phoenix. In some cases the injury was severe, 25 to 50 per cent of the plants being infested. In one small potato planting at least half of the plants had been killed.

POTATO LEAFHOPPER (Empoasca fabae Harr.)

Virginia

W. J. Schoene (June 22): A few nymphs on succulent terminals have been observed.

Minnesota

A. G. Ruggles and assistants (June): The potato leafhopper has been reported as very abundant in Martin County and over most of the State; however, it is not yet present in numbers sufficient to be alarming.

Wisconsin

E. L. Chambers (June 21): This insect is moderately abundant generally, but worse in Waupaca and Oneida Counties.

Iowa

C. J. Drake (June): The potato leafhopper is moderately abundant over the State, especially in central and northern portions.

CABBAGE

CABBAGE MAGGOT (Hylemyia brassicae Bouché)

New York

C. R. Crosby and assistants (June): From 15 to 20 per cent of the early planted cauliflower in Erie County were killed by the cabbage maggot. The insect was also very abundant in early cabbage in Chautauqua and Ontario Counties.

Wisconsin

E. L. Chambers (June 20): Several large plantings of radishes in Dane and Milwaukee Counties, consisting of upward of 2 acres each, have been complete losses. Cabbage and cauliflower are suffering more than usual.

CABBAGE APHID (Brevicoryne brassicae L.)

Nebraska

M. H. Swenk (May 15-June 15): The first aphid to be complained of this spring on vegetables was the cabbage aphid. One grower in Johnson County lost 400 plants because of this aphid.

Tennessee

A. C. Morgan and assistants (June 26): Some of the fields of cabbage near Clarksville have had the yield reduced at least half by plant lice.

HARLEQUIN BUG (Murgantia histrionica Hahn)

Mississippi

R. W. Harned (June 24): The harlequin bug has caused serious damage to cabbage and collards at Fackett, Columbus, and Gulfport during the past few days.

STRIPED FLEA BEETLE (Phyllotreta vittata Fab.)

New York

Weekly News Letter, N. Y. State College of Agr., June 10: Wayne County. Flea beetles have been causing damage in unsprayed cabbage seed beds.

Illinois

C. C. Compton (June): This insect is very destructive in Cook County, feeding on cabbage seedlings in the field. Losses will be upwards of 50 per cent.

- Minnesota A. G. Ruggles and assistants (June): The cabbage flea beetle is very abundant; has done serious damage this spring.
- Mississippi R. W. Harned (June 24): Flea beetles were very abundant on collards at Durant on June 10.

STRAWBERRY

STRAWBERRY WEEVIL (Anthonomus signatus Say)

- Minnesota A. G. Ruggles and assistants (June): The strawberry weevil is very abundant; it did serious damage this spring.

ASPARAGUS

ASPARAGUS BEETLE (Crioceris asparagi L.)

- Massachusetts A. I. Bourne (June 24): Asparagus beetles appeared May 26 and 28 in moderate abundance.
- New York C. R. Crosby and assistants (June): C. asparagi L. and C. duodecimpunctata L. are doing considerable damage on many plantations in Chautauqua County.
- South Carolina M. H. Brunson (June 25): The asparagus beetle continues to damage asparagus in restricted areas in Barnwell, Bamberg, and Orangeburg Counties.

BEANS

LIMA BEAN VINE BORER (Monoptilota pergratialis Hulst)

- Mississippi R. W. Harned (June 24): The lima bean vine borer was found injuring lima beans at Amory on June 11.

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

- New York C. R. Crosby (June 15): Adults were found in considerable abundance in hibernation in Erie County.
- Pennsylvania C. A. Thomas (June 22): The Mexican bean beetle was found in large numbers in early June attacking bush lima beans at Coatesville, Chester County.
- T. L. Guyton (June 26): This insect is very abundant at Harrisburg.
- Delaware H. L. Dozier (June 13): The Mexican bean beetle was just

starting actively to attack lima beans on May 24 at Felton. The first eggs of the season were observed hatching at Newark on June 21.

ylvania

F. M. Wadley (June 1): Adults on beans at Silver Spring are causing some injury.

Virginia

W. J. Schoene (June 22): This insect is attracting attention over the State. The adults have caused serious damage.

N. F. Howard (May 26): On May 26 over 32 per cent of the beetles placed in hibernation cages at Arlington Farm had emerged. This is probably a high record for the eastern and southeastern United States.

North Carolina

C. A. Brannon (June 25): The Mexican bean beetle is causing severe injury all over the State.

North Carolina

M. H. Brunson (June 25): This insect is very abundant and destructive, especially in the eastern half of the State.

Ohio

N. F. Howard (May 31): The average survival from seven cages in two sections of Ohio to date is slightly under 1.5 per cent, which for this section is high.

Alabama

J. M. Robinson (June 25): This insect is very abundant; it has ruined all snap beans in infested areas in northeastern Alabama. It is more destructive than in any year since its coming into the State. It seems to be adjusting itself to the lower altitudes. A very interesting thing, however, is that Stiretrus anchorago personatus Germ. has been feeding on both the larvae and adults.

Mississippi

R. W. Harned (June 24): This insect is causing considerable damage in several northeastern counties; found for the first time in Lowndes and Tippah Counties.

New Mexico

J. R. Douglass (June 6): One Mexican bean beetle was found on beans in the foothills of Estancia Valley on June 1. Subsequent scouting showed that they had appeared in canyon fields along the western edge of the valley. This is 10 days ahead of the earliest appearance, in the field, on record. Surveys of the middle Rio Grande Valley in New Mexico on June 5 showed that the beetles had recently entered the fields.

BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

North Carolina

M. H. Brunson (June 25): Cowpeas at Clemson College have been seriously injured, but the insect is now on the decline.

Ohio

E. T. Mendenhall (June): This insect is quite bad on young beans just coming up at Springfield.

Mississippi

R. W. Harned (June 24): Dr. M. R. Smith reports that the bean leaf beetle is doing considerable damage to snap and pole beans in many localities in the vicinity of A. & M. College. In some instances the work is strikingly similar to that of the Mexican bean beetle. Even the pods are being gnawed into. He states that the injury from these insects seems to be much worse in grassy gardens than in well cultivated ones. Specimens of this species have also been received from Houston, Chickasaw County.

A WEEVIL (Sternechus paludatus Casey)

New Mexico

J. R. Douglass (June 6): A bean stalk borer, Sternechus paludatus Casey, has recently issued from winter quarters and at the present is ovipositing in young bean plants in the foothills of the Estancia Valley. The larvae feed in the stems and stalks of the bean plants.

CUCUMBERS AND MELONS

MELON APHID (Aphis gossypii Glov.)

Wisconsin

E. L. Chambers (June 21): This aphid is very abundant on cucumbers over the State.

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Illinois

C. C. Compton (June): The striped cucumber beetle is very abundant; several hundred acres of pickles in Cook County showed up injury which was augmented by late frosts.

Minnesota

A. G. Ruggles and assistants (June): The striped cucumber beetle was just beginning to put in its appearance during the early part of the month, and by the middle of the month it was moderately abundant over the southern third of the State. It was reported as very abundant from Hennepin, Martin, Goodhue, and Blue Earth Counties.

Iowa

C. J. Drake (June): This insect is very abundant in central and southern Iowa.

A BEETLE (Strigoderma arboricola Fab.)

Maryland

L. M. Pears (June 25): I am enclosing two specimens of a beetle which came from Hurlock, where it has been damaging the blossoms of cantaloupe and other plants. Descriptions of the work and the habits of the beetle sound very much like that of the Japanese beetle. These specimens were collected by Mr. P. S. Fleger. (Determined by E. A. Chapin.)

IMBRICATED SNOOT BEETLE (Epicaerus imbricatus Say)

aska

H. H. Swenk (May 15-June 15): The imbricated snout beetle was found destroying young watermelon vines in Buffalo County on June 10.

ONIONS

ONION THRIPS (Thrips tabaci L.)

C. J. Drake (June): The onion thrips is becoming very abundant on onions at Ames, Davenport, Clear Lake, and St. Ansgar.

ONION MAGGOT (Hylemyia antiqua Meig.)

York

C. R. Crosby and assistants (June): The onion maggot put in its appearance in the western New York onion sections during the first week in June and did some damage. It has been reported from Chautauqua, Genesee, and Orleans Counties, though not serious.

ana

J. J. Davis (June 27): Reported early in the month from Shelby, Albion, Napanee, and Pierceton. By the 20th of the month large areas had been destroyed in some fields.

nois

C. C. Compton (June): The onion maggot is very destructive to set onions in Cook County. Late-planted onions are the least infested, which is the reverse of normal conditions.

nesota

A. G. Ruggles and assistants (June): The onion maggot was reported as very abundant in Hennepin, Houston, and Ramsey Counties.

C. J. Drake (June): The onion maggot is doing some commercial damage to onions in the vicinities of Davenport and St. Ansgar. The injury is confined to seedlings and the smaller onions.

SUGAR BEET

BET LEAFHOPPER (Eutettix tenellus Baker)

G. F. Knowlton (June 4): The beet leafhopper is fairly abundant at Promontory and just west of Snowville, but less abundant in Tooele County. A few half-grown nymphs have been collected at Snowville and Promontory.

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

G. F. Knowlton (June 5): Black flea beetles are abundant in the sugar-beet fields of Cache County and slight to moderate damage is occurring in all fields. More damage was noted at

Hyde Park, Richmond, Lewiston, and Cornish than in other towns in the valley.

BANDED FLEA BEETLE (Systema taeniata Say)

Utah

G. F. Knowlton (June 7): The banded flea beetle is rather abundant in certain fields in North Ogden and at Five Points and less abundant in most parts of northern Utah.

SUGAR BEET ROOT MAGGOT (Tetanops aldrichi Hendel)

Utah

G. F. Knowlton (May 23): Adult flies of the sugar beet root maggot were quite abundant in one field at West Point and present in a few fields at Hooper, Clinton, and Syracuse. (June 5): The adults are now very abundant at Cornish and Trenton, but less abundant at Lewiston and Amalga. The females contain well developed eggs and are mating. During the heat of the day the flies seek shelter under clods, leaves, and the shady sides of fence posts.

SPINACH LEAF MINER (Pegomya hyoscyami Panz.)

New York

C. R. Crosby and assistants (June): The spinach leaf miner was making its first appearance about the middle of June in western New York.

Utah

G. F. Knowlton (June 7): Present throughout the beet districts of Weber County and northern Davis County. The maggots are one-third to two-thirds grown. Not enough leaves are affected to be noticeable.

FALSE CHINCH BUG (Nysius ericae Schill.)

Arizona

C. L. Barnes (June 24): Several complaints have been made to us about the large numbers, and to some extent, the damage caused by the false chinch bug. This insect has been more abundant than for several years. Injuries to young citrus trees, castor bean plants, and watermelon plants have been observed during the past month. The bugs have usually damaged plants over small areas but the infested plants are usually killed. These insects often appear in large numbers and almost cover the surfaces of houses and other buildings. On a pump house near the center of an infestation we saw cast nymphal skins to a depth of 3 inches. Wild mustard, a favored host plant, was growing on three sides of the pump house. It has been reported from the Salt River Valley only.

Utah

G. F. Knowlton (June 5): The false chinch bug is less abundant in the beet fields than usual at this time of the year, but more abundant on roadside weeds.

SWEET POTATO

WHITE-LINED SPHINX (Celeria lineata Fab.)

Mississippi

R. W. Harned (June 24): What are possibly the larvae of the white-lined sphinx, were found injuring sweet potato plants at Lucedale on May 8.

ARGUS TORTOISE BEETLE (Chelymorpha cassidea Fab.)

Mississippi

R. W. Harned (June 24): Larvae and pupae of the tortoise beetle were collected on May 24 on sweet potato plants at Biloxi, where some injury had been done.

SWEET-POTATO LEAF BEETLE (Typophorus viridicyaneus Cr.)

North Carolina

B. B. Fulton (June 25): Feeding abundantly on leaves of sweet potato in Currituck County. It has apparently caused injury in previous years.

RHUBARB

RHUBARB CURCULIO (Lixus concavus Say)

Ohio

E. W. Mendenhall (June 10): I found a very serious outbreak of the rhubarb curculio in Columbus; the plantings were nearly destroyed.

MUSHROOMS

Pennsylvania

C. A. Thomas (June 22): The following insects have been common and somewhat injurious in mushroom houses in Chester County this spring: Lepidocyrtus cyaneus Tullb., Achorutes armatus Nic., tyroglyphids and other mites, and sciarid flies.

S O U T H E R N F I E L D - C R O P I N S E C T S

TOBACCO

TOBACCO FLEA BEETLE (Epitrix parvula Fab.)

North Carolina

C. H. Brannon (June 20): The flea beetle has seriously injured tobacco in most sections owing to the delayed; cool spring.

Florida

F. S. Chamberlin (June 24): The third brood of the flea beetle is very abundant in tobacco fields where control practices have been slighted. Poison applications have prevented serious damage in most cases.

Tennessee

A. C. Morgan and assistants (June 26): The tobacco flea beetle was not so numerous as usual on plant beds and is doing very little injury on young plants in the field.

TOBACCO HORNWORMS (Protoparce spp.)

North Carolina

C.H. Brannon (June 20): Tobacco hornworms are causing very severe damage in tobacco fields over the entire State.

Tennessee

A. C. Morgan and assistants (June 26): The moths of P. quinquemaculata Haw. and P. sexta Joh. are moderately numerous and the early infestation of larvae is greater than last year.

TOBACCO BUDWORM (Heliothis virescens Fab.)

North Carolina

C. H. Brannon (June 20): Tobacco budworm injury is widespread over the tobacco sections. This pest causes tremendous damage to tobacco when no control measures are used.

CORN ROOT WEBWORM (Crambus caliginosellus Clem.)

Tennessee

A. C. Morgan and assistants (June 26): This insect is moderately injurious to tobacco near Clarksville.

GREEN JUNE BEETLE (Cotinis nitida L.)

Tennessee

A. C. Morgan and assistants (June 26): This grub seriously injured the early planting on about 300 acres of tobacco in the northern part of Montgomery County.

F O R E S T A N D S H A D E - T R E E I N S E C T S

A correction - The note on Chrysomphalus tenebricosus Comst. by J. E. McEvilly, of Mississippi, in Insect Pest Survey Bulletin, Vol. 9, No. 4, p. 145, should have been C. obscurus Comst.

P E R I O D I C A L C I C A D A (Tibicina septendecim L.)

Ohio

J. S. Houser (June 18): I wish to report that in company with H. F. Deitz, I heard two individuals of the 17-year locust singing at Wooster on June 15.

Illinois

W. P. Flint (June 19): We have received definite records of adults of Brood III of the periodical cicada from Pike, Cass, Schuyler, Montgomery, Hancock, and Knox Counties. At some points, especially in Knox County, adults were reported as being very numerous.

Iowa

C. J. Drake (June): The 17-year locust has appeared in large numbers in a number of counties, but they are confined

largely to colonies here and there in lowlands along wooded areas, particularly along streams.

GYPSY MOTH (Porthetria dispar L.)

England

C. W. Collins (June 25): Men connected with the gypsy moth laboratory began to report on June 18-20 that stripping by the moth was beginning to show up in woodlands and orchards not sprayed. So far, reports have been received of stripping in several towns in the northern section of Middlesex County and the eastern part of Worcester County, Massachusetts, and in southern New Hampshire in Hillsboro and Rockingham Counties.

Hampshire

P. R. Lowry (June 25): The gypsy moth is more common this year than for the past several seasons at Durham.

BROWN-TAIL MOTH (Nygmia phaeorrhoea Don.)

ne

H. B. Peirson (May 25): The brown-tail moth is very abundant on apple at Augusta. Foliage not out and the caterpillars swarming into houses.

Hampshire

P. R. Lowry (June 25): The brown-tail moth is more abundant at Durham than for the past several seasons.

England

C. W. Collins (June 25): Infestations still persist in southern Maine and southern New Hampshire; defoliation occurring in neglected apple orchards.

SATIN MOTH (Stilpnolia salicis L.)

England

C. W. Collins (June 25): Satin-moth conditons seem to be much improved over previous years, and there is less defoliation. Some stripping noted, especially on isolated willows. Reports of defoliation of willow and poplar trees have been received from southern Maine and southern New Hampshire.

Hampshire

P. R. Lowry (June 25): The satin moth is becoming more common every year. This year I have seen more on the native poplars outside the towns than ever before; saw the first larvae spinning up for pupation on June 23.

CECROPIA MOTH (Samia cecropia L.)

th Dakota

J. A. Munro (June 25): The cecropia moth is more abundant than usual this year. Specimens have been received from various parts of the State.

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma S. & A.)

anington, D.C.

J. A. Hyslop (June 26): Larvae are numerous on various shade trees in the public parks in Washington, D. C., but doing no noticeable damage.

- Ohio E. W. Mendenhall (June 27): I find larvae working on the linden, maple, and elm trees in the parks of Dayton.
- FOREST TENT CATERPILLAR (Malacosoma disstria Hbn.)
- Massachusetts J. V. Schaffner, jr (June 25): The forest tent caterpillar was common in oak woodland in many localities in eastern Massachusetts.
- Minnesota A. G. Ruggles and assistants (June 22): This insect is very abundant in east-central Minnesota.
- BAGWORM (Thyridopteryx ephemeraeformis Haw.)
- Delaware H. L. Dozier (June 13): Dr. J. F. Adams reported a heavy infestation of bagworms on 9-year-old Yellow Transparent apple trees at Bridgeville on March 27. There were from 12 to 24 bags per tree on about 60 trees adjacent to a road dividing apples from peaches.
- Ohio E. W. Mendenhall (June 27): The bagworm is beginning to work and is quite noticeable on the elms and other shade trees in Dayton.
- Mississippi R. W. Harned (June 24): Bagworms were abundant on linden trees at Holly Spring (June 10) and on arborvitae plants at Fidayune (May 23).
- FALL CANKER WORM (Alsophila pomataria Harr.)
- Rhode Island J. V. Schaffner, jr. (June 25): Reports of heavy infestation of apple, oak, and birch trees in the vicinity of Cranston and Westerly have been received.
- Connecticut T. E. Britton (June 22): This insect has been reported from Middlesex and New London Counties attacking apple and woodland trees, but stripping is not so severe as last year.
- P. Garman (June 24): The fall canker worm has been reported as attacking apple in New Haven County, but it is less abundant than last year.
- Pennsylvania T. L. Guyton (June 26): I would like to report the presence of the fall canker worm in Somerset County.
- Wisconsin E. L. Chambers (June 20): Many trees have been almost completely defoliated by this pest in Jefferson, Dodge, Fond du Lac, and Monroe Counties. Of elm, poplar, oak, and apple, apple was the most seriously affected.
- Minnesota A. G. Ruggles and assistants (June): This insect is very abundant in east-central Minnesota.

North Dakota

J. A. Munro (June 25): The fall canker worm has caused serious damage during the first half of June to trees at Mandan and Fargo according to observations made from this office. Reports indicate that this pest is prevalent in other parts of the State including Minot, Grand Forks, and Fairmont.

Nebraska

J. W. McColloch (June 10): Injury to elms by canker worms is reported from Topeka and Natoma.

SPRING CANKER WORM (Paleacrita vernata Peck)

Pennsylvania

T. L. Guyton (June 26): I would like to report the presence of the spring canker worm over a large area in the northwestern part of the State. I made note of it in the following counties between June 20 and 25: Butler, Crawford, Mercer, McKean, Jefferson, and Clearfield. The survey was made from main travelled highways, and I can not speak for the occurrence over the entire areas of the counties named.

A PSOCID (Cerastipsocus venosus Burm.)

North Carolina

R.W. Leiby (June 19): This insect is unusually prevalent over the State in large numbers. Its interesting habits are the subject of frequent inquiries. It is reported as infesting trunks and branches of many kinds of trees.

PUTNAM'S SCALE (Aspidiotus ancylus Putn.)

North Dakota

H. C. Severin (June 24): This insect has been sent in many times during the past month from the eastern third of the State, where it was reported as attacking poplar, willow and plum.

BIRCH

BIRCH LEAF-MINING SAWFLY (Phyllotoma nemorata Fallen)

Maine

H. B. Peirson (June 6): The birch leaf-mining sawfly is a real threat to the white birch of New England; there is a very heavy infestation in central and south-central Maine.

BRONZE BIRCH BORER (Agrilus anxius Gory)

Ohio

E. W. Mendenhall (June 13): The bronze birch borer is very bad and destructive to the birch trees on streets, parks, and private estates in Oakwood, a suburb of Dayton. There are many fine trees that look like they are doomed; about 75 per cent are affected.

BIRCH LEAF MINER (Fenusa pumila Klug)

Massachusetts J. V. Schaffner, jr. (June 25): Larvae are present throughout eastern Massachusetts wherever gray birch is grown.

BOXELDER

BOXELDER APHID (Periphyllus negundinis Thos.)

South Dakota H. C. Severin (June 24): This insect is unusually abundant on boxelder in the eastern part of the State.

Nebraska M. H. Swenk (May 15-June 15): The boxelder aphid was reported from northeastern Nebraska during the last week in May.

CEDAR

DEODAR WEEVIL (Pissodes deodarae Hopk.)

Mississippi R. W. Harned (June 24): On June 21 County Agent W. R. Lominick sent to us from Vicksburg some Cedrus deodara twigs that had evidently been injured by the deodar weevil. He stated that he had not noticed injury of this nature to these plants in Vicksburg until this year.

ELM

ELM LEAF MINER (Kaliosysphinga ulmi Sund.)

New Hampshire P. R. Lowry (June 25): The elm leaf miner is severely injuring a camperdown elm at Enfield. Most of the mines are still quite small.

A LEAF BEETLE (Calligrapha scalaris Lec.)

Kansas G. A. Dean (June 3): The larva of this species is reported as defoliating elms at Glen Elder; adults were also present on the trees.

A CECIDOMYIID (Phytophaga ulmi Beut.)

Minnesota A. G. Ruggles (June 20): What is probably P. ulmi has been reported as very destructive to all young elms at Newport.

EUROPEAN ELM SCALE (Gossyparia spuria Modeer)

New Hampshire P. R. Lowry (June 25): The European elm scale is very common on several small elms at Durham; hatching of eggs began on June 20.

- Illinois W. P. Flint (June 19): This insect is being reported from several localities in the central part of the State, and is apparently increasing generally in Illinois. No serious injury to trees has been reported, although a number of elms in the vicinity of Chicago and Urbana show a rather heavy infestation.
- Nebraska M. H. Swenk (May 15-June 15): An additional report of the European elm scale was received from Red Willow County (McCook) during the first week in June.

ELM SCURFY SCALE (Chionaspis americana Johns.)

- South Dakota H. C. Severin (June 24): The elm scurfy scale has been reported as doing severe damage to elms in eastern South Dakota.

HICKORY

A PHYLLOXERA (Phylloxera sp.)

- Pennsylvania C. A. Thomas (June 22): Gall aphids, Phylloxera sp., have caused disfigurement of a number of hickory trees on an estate near Kennett Square, Chester County, by causing innumerable galls to form on the petioles and small branches.

LARCH

LARCH CASE BEARER (Coleophora laricella Hbn.)

- Maine H. B. Peirson (June 6): A heavy infestation on larch near Augusta has been reported. We have not been able to raise any parasites. Climatic conditions seem to have a strong influence on the abundance of this pest.

LARCH SAWFLY (Nematus erichsoni Hartig)

- North Dakota J. A. Munro (June 25): June 20 a planting of larch at Mandan, Norton County, was found to be infested with the larvae of the larch sawfly. The following day an arsenical spray was applied with the result that most of the worms were killed. Horticulturists at Mandan told me that they knew of no other larch plantings within a radius of 150 miles and that they were at a loss as to how the insect became established there.

WOOLLY LARCH APHID (Chermes strobilobius Kalt.)

- Connecticut R. B. Friend (June 3): This insect is more abundant than usual on European larches at Middlebury.

MAPLE

MAPLE-BLADDER GALL (Phyllocoptes quadripes Shim.)

Ohio E. W. Mendenhall (June 12): Galls are quite abundant on some of the soft maples in Tippecanoe City, Miami County.

Indiana J. J. Davis (June 27): Bladder maple gall reported abundant on maple leaves at Ray on June 9.

WOOLLY MAPLE LEAF APHID (Pemphigus acerifolii Riley)

North Carolina R. W. Leiby (June 19): The woolly maple aphid has been extremely abundant, especially in the Piedmont section, and the subject of very frequent complaints.

WOOLLY ALDER APHID (Prociphilus tessellatus Fitch)

North Carolina C. H. Brannon (June 15): This insect has been unusually abundant, having been reported from all parts of the State as attacking soft maples.

NORWAY MAPLE APHID (Periphyllus lyropictus Kess.)

New York G. M. Coddington (June 15): In many localities in Westchester County the ground is completely covered with leaves from the maple trees. Aphids are the main cause of the leaves dropping.

Pennsylvania C. A. Thomas (June 22): The Norway maple aphid is causing considerable defoliation of maples in southeastern Pennsylvania. Syrphid larvae and coccinellids are common feeding on the aphids.

Ohio E. W. Mendenhall (June 11): Norway maples are badly infested with aphids in Dayton and vicinity. The leaves are sticky with honeydew.

Indiana J. J. Davis (June 27): Abundant on Norway maple at Fort Wayne, Woodburn, and LaFayette. All reports between June 20 and 26.

COTTONY MAPLE SCALE (Pulvinaria vitis L.)

South Carolina M. H. Brunson (June 6): The cottony maple scale has been reported as attacking maples at Pelzer.

Indiana J. J. Davis (June 27): This insect has been reported thus far from Francisville, Parker, Plymouth, Garrett, Tipton, and Frankfort. All cases, except one on grape, were reported on maple.

PINE

PINE BARK APHID (Chermes pinicorticis Fitch)

Minnesota

A. G. Ruggles and assistants (June): The pine bark aphid is very abundant.

SOUTHERN PINE BEETLE (Dendroctonus frontalis Zimm.)

South Carolina

M. H. Brunson (May 30): The pine bark beetle has killed several pines at Aiken.

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana Schiff.)

Connecticut

R. B. Friend (May 21): Larvae are abundant in young red-pine plantations near Hamden.

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

Ohio

E. W. Mendenhall (May 29): I find Mugho pine in a nursery at Mt. Vernon infested with the pine leaf scale.

Nebraska

M. H. Swenk (May 15-June 15): Complaints of injury by the pine leaf scale continued to be received all through May, one report coming from as far west as Hitchcock County.

POPLAR

COTTONWOOD LEAF BEETLE (Lina scripta Fab.)

Mississippi

R. W. Harned (June 24): Injury to poplar trees by Melasoma scripta was reported on June 18 from Moss Point.

SPRUCE

SPRUCE BUDWORM (Harmoloba fumiferana Clem.)

Wisconsin

E. L. Chambers (June 21): The spruce budworm is moderately abundant in Jefferson, Milwaukee, and Fond du Lac Counties, according to reports.

Minnesota

A. G. Ruggles and assistants (June): Although observed as somewhat abundant about St. Paul, this insect is attracting but little attention.

South Dakota

H. C. Severin (June 24): The spruce budworm is very abundant on spruce at Arlington. This is the second outbreak we have had in my experience.

SPRUCE BUD SCALE (Physokermes piceae Schrank)

Minnesota

K. A. Kirkpatrick (June 18): A scale on spruce trees has been noted and a number of complaints have been received.

I N S E C T S A T T A C K I N G G R E E N H O U S E
A N D O R N A M E N T A L P L A N T S

RED SPIDER (Tetranychus telarius L.)

New York

C. R. Crosby (June 15): The red spider is badly infesting pepper seedlings in a greenhouse in Erie County.

North Carolina

C. H. Brannon (June 25): Many flower gardens over the State are heavily infested.

Indiana

J. J. Davis (June 27): Red spider was abundant on phlox at Goldsmith (June 3), and on evergreens at Carlisle (June 6).

Nebraska

M. H. Swenk (May 15-June 15): Red spiders resumed their troublesome attacks on evergreens during the period here covered. The first new work was on Thuja orientalis in Dodge County on May 28. Serious injury to Black Hills spruce in Saline County had taken place by June 12.

Kansas

J. W. McColloch (June 18): Serious damage to cedars has been reported from Manhattan, Blue Rapids, and Wakefield.

TORTOISE BEETLES (Cassidinae)

Wisconsin

E. L. Chambers (June 20): Our correspondence indicates that this pest is unusually prevalent and our nursery inspectors have been having their attention called to it frequently as attacking Japanese lantern plants in southeastern counties.

LONG SOFT SCALE (Coccus elongatus Sign.)

Ohio

E. W. Mendenhall (June 10): The Euphorbia plants in one of the greenhouses at Painesville are badly infested with the long soft scale, which is doing considerable damage.

CANNA

LARGER CANNA LEAF-ROLLER (Calpodex ethlius Cram.)

Mississippi

R. W. Harned (June 24): Serious injury to cannas at Hattiesburg and Lucedale by the larger canna leaf-roller was reported on June 19 and May 22.

LESSER CANNA LEAF-ROLLER (Geshna cannalis Quaint.)

Mississippi R. W. Harned (June 24): Serious injury to cannas by the lesser canna leaf roller was reported on June 19 from McComb.

DAHLIA

A WEEVIL (Apion metallicum Gerst.)

Mississippi R. W. Harned (May 23): Weevils were collected at Moss Point on May 15 by R. P. Colmer, who reports that they were perforating the leaves of dahlia plants. (Identified by L.L.Buchanan.)

SUGAR BEET THRIPS (Heliothrips femoralis Heeger)

Delaware H. L. Dozier (June 13): Very abundant in the University greenhouse at Newark during May and early June, seriously injuring young dahlia cuttings, impatiens, etc.

IRIS

A BLISTER BEETLE (Epicauta ferruginea Say)

Mississippi R. W. Harned (June 24): Blister beetles were found injuring iris at Aberdeen on June 14.

IRIS BORER (Macronoctua onusta Grote)

Wisconsin E. L. Chambers (June 20): Several small patches of iris have been observed infested 100 per cent with the borer and it is appearing in more plantings each summer. Reports have been received from Jefferson, Milwaukee, Dane, and Racine Counties.

IVY

SOFT SCALE (Coccus hesperidum L.)

Ohio E. W. Mendenhall (June 22): Infesting English ivy in a greenhouse at Springfield and doing considerable damage.

EIGHT-SPOTTED FORESTER (Alypia octomaculata Fab.)

Indiana J. J. Davis (June 27): Larvae were abundant and defoliating ivy at Hammond in 1928. This year the moths were observed about ivy vines on June 18.

LILAC

LILAC LEAF MINER (Gracilaria syringella Fab.)

Minnesota

A. G. Ruggles (June 20): The lilac leaf miner is extremely abundant and doing much damage in Ramsey and Hennepin Counties

OLEANDER

POLKA-DOT WART MOTH (Syntomeida epilais Walk.)

Florida

J. R. Watson (June 23): Larvae of the polka-dot wart moth have been defoliating oleander on the lower eastern coast.

PRIVET

A LEAF ROLLER (Cacoecia rosana L.)

Massachusetts

J. V. Schaffner, jr. (June 25): These were abundant the last of May and early in June, especially in California privet in towns and cities around Melrose. It was necessary for many property owners to spray their hedges to protect them.

RUSTY LEAF MITE (Phyllocoptes schlectendali Nal.)

Connecticut

W. E. Britton (June 22): This insect is more abundant on California privet in New Haven than I have ever seen it.

ROSE

APHIDS (Aphidae)

Minnesota

A. G. Ruggles and assistants (June): Aphids have been reported as very abundant on roses and other ornamentals in Traverse and Chippewa Counties and very abundant on buckthorn in east-central Minnesota.

ROSE SAWFLY (Caliroa aethiops Fab.)

Delaware

H. L. Dozier (June 13): Rose slugs were first noticed this year at Newark on May 17.

Nebraska

M. H. Swenk (May 15-June 15): The rose slug was unusually injurious to rose over eastern Nebraska, west in the Platte Valley to Kearney and Buffalo Counties during the first week in June.

ROSE CURCULIO (Rhynchites bicolor Fab.)

North Dakota

J. A. Munro (June 25): As usual the rose curculio is very abundant. The injury which it causes to rose buds makes the growing of roses very difficult. It attacks the developing buds of either the cultivated or wild rose.

ROSE CHAFER (Macrodactylus subspinosus Fab.)

Delaware

H. L. Dozier (June 13): The rose chafer appeared about May 28 at Newark and are very serious at the present time attacking rose, peonies, grapes, etc., showing a decided preference for the white flowering varieties.

Indiana

J. J. Davis (June 27): Rose beetles were feeding on foliage and green apples at Silver Lake June 13, peaches, rose, cherry, plum, and grape at Terre Haute June 7, "by millions and eating everything" at Hobart June 20, and at Plymouth June 25 where it damaged apple trees. In one case a report of injury to young chickens was reported.

Nebraska

M.H. Swenk (May 15-June 15): The rose chafer was first observed this season in Bazine County on June 7. Each year these beetles appear in large numbers in the sandhill region of Nebraska and cause much loss and annoyance to the ranchmen and farmers of that region.

SUNFLOWER

A CERAMBYCID (Mecas inornata Say)

Mississippi

R. W. Harned (June 19): On June 3 a correspondent at Carrollton sent to this office two cerambycid beetles that were identified by J. M. Langston as M. inornata. The correspondent wrote as follows: "I have a small patch of mammoth Russian sunflowers now 2 or 3 feet tall. An insect has attacked them and apparently the whole patch will be destroyed. I can kill or chase all of them out of the patch and in an hour they are back again. They work during the middle of the day by girdling the plants 6 or 8 inches below the top; the plants die immediately."

VERBENA

MARGUERITE LEAF MINER (Phytomyza chrysanthemi Kowarz)

Mississippi

R. W. Harned (June 24): Serious injury to Verbena plants was reported on June 11 from Duncan.

INSECTS ATTACKING MAN AND
DOMESTIC ANIMALS

MAN

MOSQUITOES (Culicidae)

Alabama

J. M. Robinson (June 25): Mosquitoes are appearing in unusual numbers.

Haiti

R. C. Smith (May 26): This is the rainy season and mosquitoes are very abundant at Port-au-Prince. They are exceedingly annoying in houses. Last week they were so annoying in a cotton field that we were forced to leave. The malarial index is rising, according to the monthly report of the Service of Agriculture. Aedes sollicitans Walk. and other species are represented.

CHIGGER (Trombicula irritans Riley)

Kansas

R. L. Parker (June 20): Chiggers have been reported attacking people near Topeka and Manhattan, but in less numbers than last year.

RAT MITE (Liponyssus bacoti Hirst)

Texas

W. E. Dove.- During the winter and spring months, the tropical rat mite caused numerous persons to report to physicians for treatment of rat mite dermatitis. Often the cause of several papules was attributed to the bites of a single mite. In one instance such skin lesions were so numerous on the body of a child that the premises were quarantined for chicken pox. As far north as Sherman this species is apparently well established. Mites have been collected in a dining room and in wash rooms used by the public. There are indications that dispersion may take place at least in part by the travels of persons.

SAND FLIES (Culicoides sp.)

Maryland

W. E. Dove (May 20): Specimens of these biting midges were collected at Baltimore on May 20. And during early spring they were annoying to man in this vicinity.

CATTLE

CATTLE GRUBS (Hypoderma spp.)

Vermont

F. C. Bishopp and H. S. Peters (June 20): Cattle grubs are moderately abundant for this late date, although they are said

to be less numerous on cattle this spring than for several years. The average number per head in 452 milk cows examined was 2.2. The grubs are maturing rapidly and leaving the cattle. H. bovis DeG. is still appearing in the subcutaneous tissues of the backs. Cattle are being greatly annoyed by heel fly attacks. Some herds are refusing to go out to pasture on account of their fear. H. lineatum De Vill. is still present in the backs of a number of cows in most herds. Lesions of penetration of the young grubs of this species are numerous and dairymen are complaining of the swellings from this cause along the escutcheons of the cows. At Montpelier there were 84 cows examined which showed an average of 1.5 grubs per head.

New Hampshire

F. C. Bishopp and H. S. Peters (June 19): An average of .9 grubs per head was obtained by examination of 126 cows at Littleton.

HORN FLY (Haematobia irritans L.)

Vermont

F. C. Bishopp and H. S. Peters (June 20): Horn flies are causing some annoyance to dairy cattle in north-central Vermont. Most farmers are now using fly sprays; some began spraying about June 10. In unsprayed herds the number of horn flies per animal ranges from 25 to 1,500.

Missouri

L. Haseman (June): Horn flies are unusually abundant; the heaviest infestations that I have ever known for June.

HORSES

HORSE FLY (Tabanus lasiophthalmus Macq.)

New York

F. C. Bishopp and H. S. Peters (June 12): Horse flies are causing much annoyance to horses and dairy cattle near Port Jervis. Stock kept from grazing during much of the day from the combined attacks of these flies and Hypoderma spp. These flies number from 2 to 10 per head.

Vermont

F. C. Bishopp and H. S. Peters (June 20): Tabanids are annoying dairy cattle much in low-lying pastures in the vicinity of Burlington.

Pennsylvania

F. C. Bishopp and H. S. Peters (June 11): Cattle are greatly annoyed until nearly dark in the vicinity of Weatherly. There are from 1 to 10 tabanids attacking each animal in a herd near here.

POULTRYBUFFALO GNATS (Simuliidae)

Michigan

R. H. Pettit (June 3): I received this morning several specimens of Simulium from a location about 30 miles north of Grand Rapids. These flies are appearing in swarms and attacking ducks and chickens. They are reported to be quite troublesome, sucking blood as they do and disturbing the birds. This is, so far as I know, the first time that Simulium has ever been found in Michigan attacking birds. (Identified by C. T. Greene as Simulium vittatum Velt.)

Iowa

C. N. Ainslie (June 5): These gnats (Eusimulium sp.) have been a pest in northwestern Iowa for several weeks, tormenting people and attacking young chickens and turkeys. It is reported that one poultryman lost 600 young chickens from these gnats and that other smaller losses have been reported. They are supposed to have been bred in the side waters of the Missouri.

FOWL TICK (Argas miniatus Koch)

New Mexico

J. R. Douglass (June 6): Complaints of the fowl tick, sometimes called blue bug, have been received from Estancia, where it was attacking poultry.

HOGSHOG MANGE MITE (Sarcoptes scabiei suis DeG.)

Nebraska

M. H. Swenk (May 15-June 15): A Butler County correspondent reported that his hogs were badly infested with S. suis.

HOUSEHOLD INSECTS

ANTS (Formicidae)

South Carolina

M. H. Brunson (June): A house at Winnsboro has been considerably damaged by Camponotus herculeanus pennsylvanicus DeG.

Nebraska

M. H. Swenk (May 15-June 15): The mound-building ant, Pogonomyrmex occidentalis Cress. was reported as troublesome from western counties during the period here covered. It was reported from Deuel County on May 11. Formica rufa L. has been unusually plentiful and troublesome in Rock County. In eastern Nebraska, F. fusca L. has been especially troublesome in the lawns and gardens and sometimes as invaders of houses. These complaints have been received numerously from Douglas, Lancaster, and other eastern counties, west to Rock, Buffalo, and Franklin Counties.

Mississippi

R. W. Harned (June 24): Dr. M. R. Smith reports that the tiny black ant, Monomorium minimum Buckl., seems to be quite a pest in Amory. The ants were noticed on the foundation pillars of many houses on which they formed conspicuous trails. He also reports that Prenolepis sp., is quite abundant in a number of houses at West Point. On a number of occasions during the past two weeks, S. geminata Fab. has been taking flight from its nests. In a number of cases the ants have emerged from beneath concrete sidewalks and in others from the walls or foundations of houses. A housekeeper at West Point has been troubled by the ants crawling around in the bath room, especially in the vicinity of the water basin where the ants seek water. It is believed that the ants are nesting in the wall.

CARPENTER BEE (Xylocopa virginica Dru.)

Kansas

J. W. McColloch (June 15): Injury to farm buildings by carpenter bees has been reported from Maple Hill and Parker.

SILVER FISH (Lepisma saccharina L.)

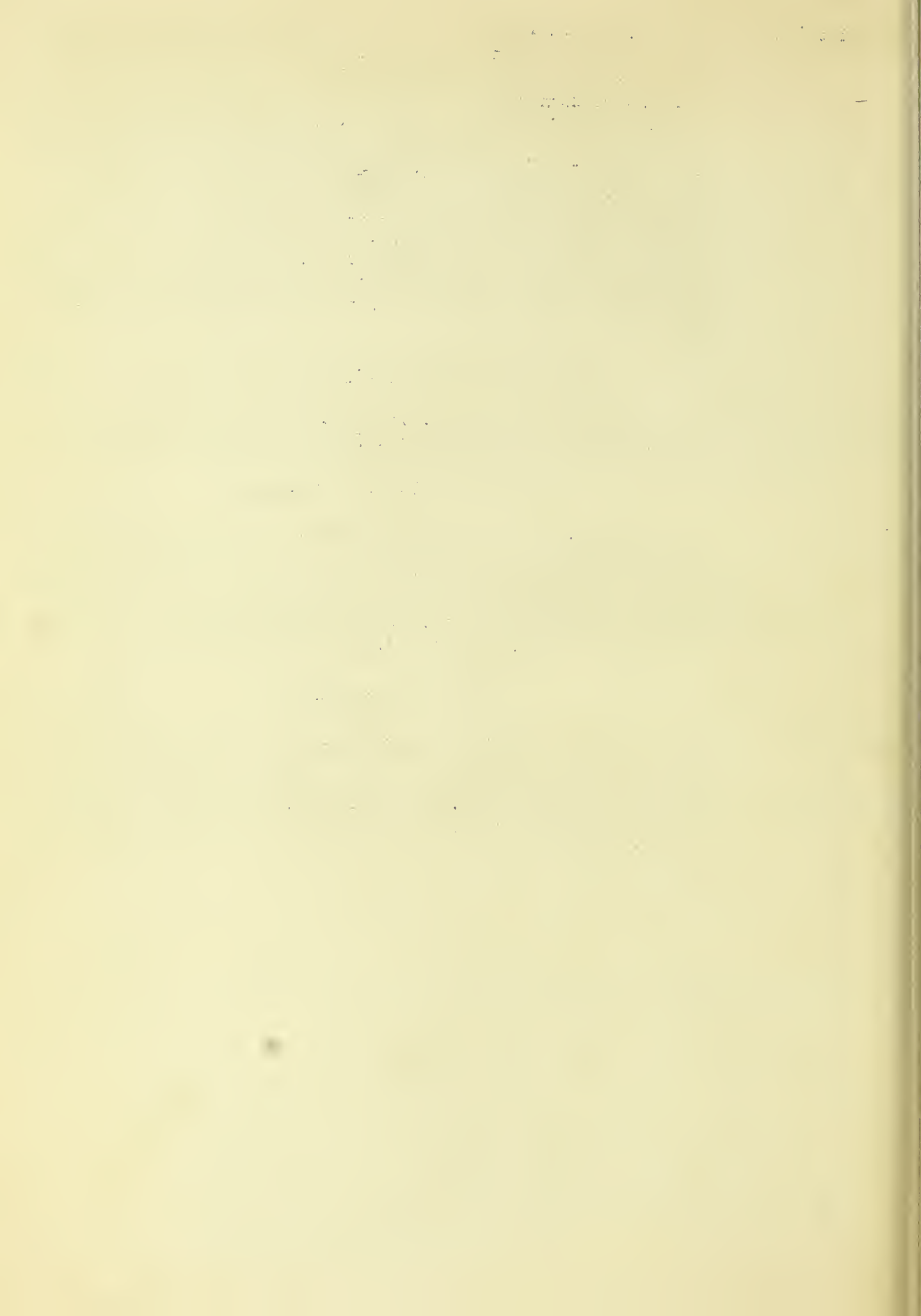
Texas

W. E. Dove and F. J. Frueger (June): At Dallas injuries to rugs, overstuffed furniture, and to cords suspending framed pictures were attributed to the feeding habits of silver fish. They were observed in a new residence having a brick foundation and hardwood floors. It is thought that they entered the house by following the drainage from the ice box.

A FLY (Aphiochaeta sp.)

Pennsylvania

C. A. Thomas (June 22): Aphiochaeta sp. has infested dwelling houses in the mushroom district (Chester County) on several occasions this spring. These tiny flies came from the mushroom houses and outdoor manure piles near them. They penetrated ordinary fly screens and made themselves generally objectionable.



THE INSECT PEST SURVEY
BULLETIN

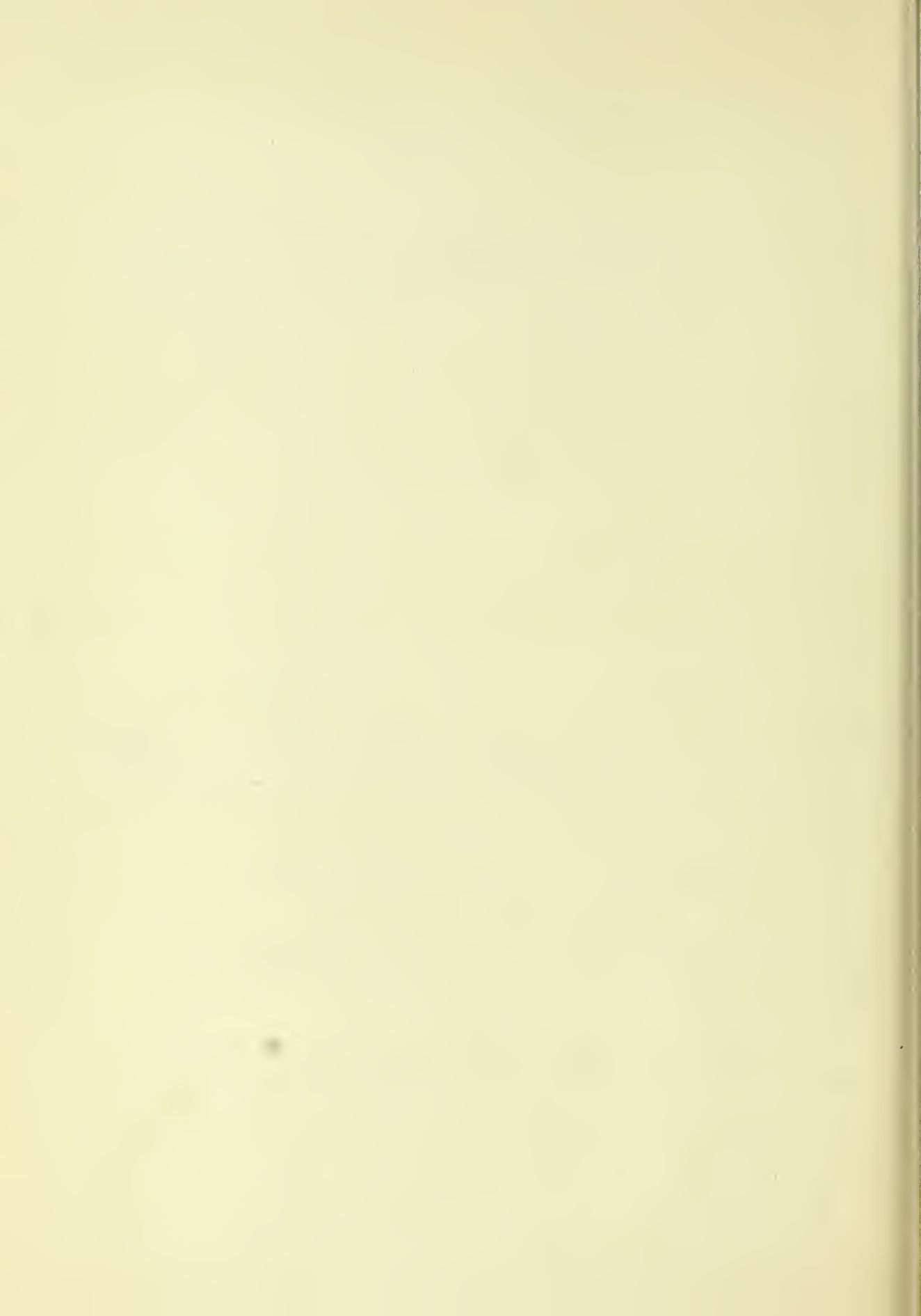
A periodical review of entomological conditions throughout the United States
issued on the first of each month from March to December, inclusive.

Volume 9

August 1, 1929

Number 6

BUREAU OF ENTOMOLOGY
UNITED STATES
DEPARTMENT OF AGRICULTURE
AND
THE STATE ENTOMOLOGICAL
AGENCIES COOPERATING



INSECT PEST SURVEY BULLETIN

Vol. 9

August 1, 1929

No. 6

OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR JULY, 1929

The Mediterranean fruit fly was reported last month from southern Duval, eastern Levy, Hernando, and Busco Counties, in addition to the counties reported in the last number of the Survey Bulletin. These are all contiguous to the counties already reported. No infested Florida fruit was reported as having been discovered at points outside of the State during the month.

The grasshopper situation reported in the last number of the Survey Bulletin has not materially changed. During the month rather intense though limited outbreaks developed in southern North Dakota and parts of South Dakota and Nebraska. Small outbreaks also developed over a wide area in central Texas. Further depredations by the eastern lubber grasshopper were reported from the Gulf region.

Wireworm trouble continues to be reported from practically the entire country extending from Maine to Washington, and southward to North Carolina and Missouri.

The pale western cutworm, after a subsidence of several years, is again appearing in outbreak numbers in North Dakota and severe depredations by other species of cutworms have been received from Maine, New York, and most of the States in the Mississippi Valley.

The Hessian fly survey for the State of Ohio has been completed and shows a decrease of average infestation for the area surveyed from 13.5 per cent in 1928 to 3.4 per cent this year. Although the Hessian fly was subnormally abundant in Missouri and Kansas this year there are decided indications of heavy infestation on early-planted wheat in these States this fall.

It is estimated that the wheat straw worm has reduced the Kansas wheat crop over 10,000,000 bushels.

The corn ear worm put in its appearance in noticeable numbers as far north as Massachusetts and South Dakota during the last week of this month.

The fall armyworm abundance reported in the last Survey Bulletin continued throughout this month with increasing severity of damage.

The armyworm is developing in very serious numbers over small areas from New York westward through Ohio to South Dakota and Iowa.

The chinch bug is appearing in southern Michigan this year. Outbreaks of this insect in Michigan are reported only at long intervals.

The rosy apple aphid subsided to negligible proportions throughout the New England and Middle Atlantic States, but is more prevalent than usual this year in Ohio.

The apple anhid is generally abundant throughout the entire north-eastern section of the country extending from Maine to Virginia and westward to Ohio.

The oriental fruit moth continues to be causing considerable alarm throughout the New England, Middle Atlantic, Southern, and East Central States.

The plum curculio continues to be the most serious single fruit pest over practically the entire country east of the Rocky Mountains.

The Colorado potato beetle is more prevalent than it has been for several years in the Middle Atlantic, East Central, and West Central States.

The Mexican bean beetle is now well spread over Connecticut, most of Pennsylvania, and Southern New York State. In Alabama and Mississippi its damage is much more serious than it has been in several years.

The pickle worm did very serious damage to all cucurbitaceous plants in Mississippi and Alabama.

Three moths new to our North American fauna are recorded in this number of the Bulletin. They are Chrysoclista linneella Clerck on linden from near New York City, Batodes angustionana Haw. from yew in Victoria, B. C., and Cnephesia longana Haw. reared from strawberry fruit in Oregon.

OUTSTANDING ENTOMOLOGICAL FEATURES FOR CANADA FOR JULY, 1929.

The pale western cutworm has been destructive over a large area in south central and southwestern Saskatchewan. The infestation appears to be the most serious yet recorded in the eastern part of the range of this species. The very dry conditions of May and June presage continued or increased trouble next year.

The bertha armyworm, Barathra configurata Walk., is infesting a variety of field and garden crops and weeds in southeastern British Columbia. There was a general infestation of this species over the interior of British Columbia last year.

Scattered outbreaks of the red-backed cutworm, Euxoa ochrogaster Guen., have been recorded from southern sections of Manitoba, Saskatchewan, and Alberta. An unusual absence of cutworm injury this spring is recorded from the Okanagan Valley, British Columbia. In New Brunswick the greasy cutworm, Agrotis ypsilon Rott., attacked potatoes, sunflowers, turnips, and corn, on farms in New Brunswick, along the St. John River, in York and Sunbury Counties, early in July.

The Colorado potato beetle is reported as more abundant than usual in the Annapolis Valley, Nova Scotia, and in the Ottawa district, Ontario. In Manitoba it is said to be scarcer than usual and has been reported in destructive numbers only in a few places.

In southwestern Alberta and southeastern British Columbia, the onion maggot, Hylemyia antiqua Meig., and the cabbage maggot, F. brassicae Bouche, are reported as much less abundant and destructive than in 1928. The onion maggot is also reported as less abundant than in previous years in the Ottawa district, Ontario.

Up to mid-July there had been much less damage by insects in Nova Scotia orchards than for a considerable number of years.

A severe infestation of the European apple sucker, Psyllis mali Schmid., has been found a few miles east and a few miles west of Annapolis, Nova Scotia. This record indicates the most westerly point where appreciable numbers are found.

The apple curculio, Tachypterellus quadrigibbus Say, has caused severe damage to pears in certain orchards in the Salmon Arm district, British Columbia. This insect had not previously been recorded as a fruit pest in this section. The apple curculio also has been particularly numerous this year in orchards in the province of Quebec.

The plum curculio has caused more injury in Quebec apple orchards than in the previous several years.

Considerable numbers of first-generation larvae of the apple and thorn skeletonizer have been noticed in the Annapolis district, Nova Scotia, and an outbreak is anticipated when the second generation appears.

Another heavy infestation of the hemlock looper is indicated in the Trinity Bay district on the north shore of the St. Lawrence, Quebec, during this season. A large area of balsam heavily defoliated last year is expected to die in the Manikugan River area. The outbreak of this species is in its second year at Indian River and Burrard Inlet, British Columbia, and probably much of the hemlock will be killed. In addition

to hemlock many other coniferous trees and deciduous plants are affected.

Severe outbreaks of the satin moth and tent caterpillars have resulted in the total defoliation of hundreds of acres of brush and cottonwood stands in the western half of the lower Fraser Valley, British Columbia. In the Lloydminster district, Saskatchewan, the forest tent caterpillar caused probably total defoliation of aspen poplars. The outbreak appears to be extending eastward each year and parasites are gradually checking the tent caterpillars in older infestations.

In the Barkerville and Stanley region of British Columbia, the infestation of the spruce budworm has been retarded by cold weather and rain.

The tussock moth Hemerocampa pseudotsugata McD., which in 1928 was reported around a ranch house in the B. X. district, 5 miles northeast of Vernon, British Columbia, has spread considerably and is now attacking areas of Douglas fir on the mountain side.

Adults of the fall webworm are unusually abundant in the lower Fraser Valley, British Columbia, and a severe outbreak of this defoliator is in prospect later in the year.

Reports from Nova Scotia, Ontario, Manitoba, Saskatchewan, and British Columbia indicate that mosquitoes are much less troublesome in the Dominion this year than in 1928. This is probably largely due to subnormal rainfall in early summer.

GENERAL FIELDERS

GRASSHOPPERS (Acrididae)

- North Carolina Z. F. Metcalf (July 21): Very abundant over the State, especially on tobacco.
- North Dakota J. A. Munro (July 22): Mr. R. Shotwell, in a letter dated July 16, reported that grasshoppers were very late in putting in their appearance in the vicinities of Dickinson and Beach this year, the peak of hatching being reached the first week in July. He states that they are very thick along the edges of wheat and flax fields but that their prevalence will not mean a wholesale destruction of crops, although it will probably mean a loss of from 10 to 50 per cent in some places. Mr. Bruce, at Sheldon, reports that Melanoplus bivittatus Say, M. femur-rubrum DeG., and M. atlantis Riley were present in outbreak numbers in his vicinity.
- South Dakota W. O. Severin (July 20): Reports of damage to alfalfa, chiefly, are just beginning to come in, especially from Lyman, Brule, and Pennington Counties.
- Nebraska L. F. Swenk (June 15-July 15): Grasshoppers continued to be troublesome during the period here covered. They had hatched out plentifully in Deuel County and by June 19 were causing many complaints. During the second week in July many growers in Lancaster County, especially north and east of Lincoln, complained of injury to vegetables and flower gardens.
- Kansas J. W. McColloch (July 28): Injury is being done to garden crops at Penokee.
- Texas F. L. Thomas and assistants (June 26): Grasshoppers have been reported from San Jacinto, Milam, Bosque, Jones, Archer, McCullough, Kendall, and Tom Green Counties recently.
- Wyoming H. L. Sweetman (July 17): Moderately abundant in unirrigated crops.
- New Mexico J. R. Eyer (June 28): A severe outbreak of grasshoppers has been reported by G. A. Trotter at Zuni.
- EASTERN LUBBER GRASSHOPPER (Romalea microptera Beauv.)
- Alabama E. P. Loding (July 15): This insect has been and is still doing great damage to vegetation near Mobile. I have rarely seen it more plentiful.
- Louisiana T. E. Hinds (July 20): The eastern lubber grasshopper is moderately abundant in the vicinity of Baton Rouge.

FIELD CRICKET (Gryllus assimilis Fab.)

North Dakota J. A. Munro (July 22): The field cricket appears to be on the increase again at Fargo.

Wyoming H. L. Sweetman (July 15): There is a local outbreak on alfalfa and small grains in Niobrara County.

WIREWORMS (Elateridae)

Maine C. R. Phipps (July 20): Agriotes mancus Say is moderately abundant on potato seed pieces and plants, also on cabbage and corn, in Cumberland, Knox, Kennebec, Androscoggin, Penobscot, and Somerset Counties.

Connecticut B. H. Walden (July 6): Melanotus sp., probably communis Gyll., is attacking corn in North Haven in greater numbers than usual.

New York Weekly News Letter, N. Y. State College of Agr., July : The wheat wireworm, Agriotes mancus Say, is seriously damaging cabbage in Ontario County. (abstract J. A. H.)

North Carolina Z. P. Metcalf (July 21): Wireworms are moderately abundant over the State, especially in tobacco fields.

Indiana J. J. Davis (July 22): Wireworms are serious in corn at Shoals; reported June 29.

Illinois W. P. Flint (July 20): Wireworms are very abundant.

Nebraska M. H. Swenk (July 19): Reports of heavy infestations on corn were received up to about July 1. These later reports included Melanotus cribulosus Lec. as well as M. fissilis Say.

South Dakota H. C. Severin (July 20): Moderately abundant in southeastern South Dakota.

Missouri L. Haseman (July 22): Corn suffered severe damage earlier in the season.

Idaho C. Wakeland (July 24): Very serious injury to corn, potatoes, grain and truck crops in southwestern Idaho has been reported.

WHITE GRUBS (Phyllophaga spp.)

Ohio E. T. Mendenhall (July 18): The attack on strawberries at New Carlisle and Lithopolis is very severe.

Missouri L. Haseman (July 22): White grubs are very abundant; cultivated crops are not seriously damaged yet, however.

Arkansas

M. H. Swenk (June 15-July 15): Adults continued abundant during the period here covered: the grubs are scarce.

Alabama

H. P. Ioding (July 15): Fewer complaints have been received than usual. P. micans Knoch did a little damage to young pecan growth early in March.

Louisiana

H. Baker (June 28): Word came on April 9 that there was a serious outbreak of June bugs at Elizabeth. I arrived in Elizabeth April 11 and remained until the 13th, and during that time very few bugs were seen. However, a considerable number of young pecan trees were seriously defoliated, the work having been done on the three or four nights previously, when great numbers had been observed feeding. Little damage had been done in the main orchard planting, though there was considerable evidence of the presence of the June bugs. Specimens were identified by E. A. Chapin as follows: P. arkansana Schaeff., P. praetermissa Horn, P. micans Knoch.

I was told that this pecan orchard, 1,100 acres, was planted in 1923 on cutover pine land not yet fully cleared and has been defoliated by June bugs each year beginning with 1926, and up to this year with the result that it is far behind the size that it should have reached for its age. The manager stated that last year, 1928, a portion of the orchard was defoliated three times and practically all of it at least twice. This year the infestation which started just prior to my trip was abruptly stopped, whether because of cooler weather which came just at that time and lasted for a considerable time or because of a short brood this year, I do not know, but at least the orchard was not defoliated save for the few trees about the house of the manager.

Considerable damage was also caused to young pecan trees in the vicinity of Shreveport. They were most plentiful during the period from April 7th to 20th, and reappeared again for one night, May 6th, in considerable numbers. Species were determined by Mr. Chapin as follows: P. prunina Lec., P. ulkei Smith, P. tristis Fab. The damage in all cases was caused by the adults.

CUTWORMS (Noctuidae)

Illinois

C. R. Phipps (July 20): Agrotis ypsilon Rott. is very abundant on corn, potatoes, and cabbage.

New York

Weekly News Letter, N. Y. State College of Agr., July: Cutworms have been unusually severe in Onondaga, Ontario, Suffolk, Genesee, Orleans, and Monroe Counties, attacking various crops, especially corn and cabbage. (Abstract J. A. H.)

Minnesota

A. G. Ruggles and assistants (July): Cutworms continued seriously destructive throughout the earlier part of the month. Considerable damage to corn was reported from practically all

of the southern part of the State, while damage to truck crops was even more extensive.

North Dakota

C. N. Ainslie (July 1): Forosagrotis orthogonia Morr. is again multiplying after a subsidence of several years. Possibly the steady cold of the past winter has contributed to its safe hibernation. Wheat fields of hundreds of acres have been plowed up this spring after the cutworms had taken the grain. One 100-acre field of wheat was taken and the worms were taking the flax that had been sown in place of the wheat. Corn has been replanted in many cases. The insect seems to be in great abundance in spots.

Nebraska

M. H. Swenk (June 15-July 15): Depredations in northeastern Nebraska, in an area including the Elkhorn Valley counties from Cuming to Holt Counties, continued until the end of June, although in other parts of the State injury ended early in June. In Elkhorn Valley corn was cut off an inch or so under the ground. The cutworms are neither the glassy nor the pale western species, which indicates a third species of subterranean cutting habits. Similar injury was reported from Cedar County on June 21, but had largely stopped in that vicinity by June 25.

Arkansas

D. Isley (July 1): Very abundant in the valleys of the Mississippi and St. Francis Rivers, from Mississippi County south to Phillips County.

Montana

W. B. Mabey (July 10): Euxoa ochrogaster Guen. is moderately abundant in central Montana.

CEREAL AND FORAGE - CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

Ohio

T. H. Parks (July 25): The annual wheat-insect survey has been completed and the Hessian fly found to be much less prevalent than usual. The only county found to have a serious infestation is Butler, which now has 35 per cent of the straws infested. The average infestation for the 34 counties surveyed is 3.4 per cent compared with 13.5 per cent for the State last year. This is a great reduction for most sections. In some north-central and northwestern counties not a single specimen could be found during the day's search when from 900 to 1,000 straws were carefully examined.

The following are the percentages of straws found infested in the counties surveyed:

Auglaize	0.0	Knox	1.0
Butler	35.0	Logan	0.0
Champaign	0.0	Madison	1.6
Clermont	8.7	Medina	1.9
Clinton	5.2	Miami	.5
Columbiana	9.6	Muskingum	1.2
Crawford	2.2	Ottawa	1.0
Darke	1.3	Pickaway	3.5
Defiance	0.0	Richland	1.1
Delaware	0.0	Ross	2.5
Fulton	1.3	Sandusky	1.3
Hamilton	7.4	Seneca	1.3
Hancock	1.0	Stark	4.3
Henry	1.0	Tuscarawas	2.1
Highland	7.7	Union	0.0
Holmes	1.2	Warren	8.6
Hyron	0.0	Wayne	2.3

Average 3.4

Kansas

J. W. McCulloch (July 12): Kansas Crop Report (released July 11). "The prospect declined considerably over June 1, and part of the decline is attributed to wheat straw worm and Hessian fly." Personally, I think at least 50 per cent of the decline is due to these two insects. (July 22): A general light infestation is to be found over most of the wheat belt of Kansas. Damage to the 1929 crop was generally light, but there are enough flax-seed present to indicate an impending outbreak.

WHEAT MIDGE (Contarinia tritici Kby.)

Ohio

T. H. Parks (July 25): Not a single specimen was observed by the writer during the annual wheat survey.

WHEAT STRAW WORM (Harmolita grandis Riley)

Kansas

J. W. McCulloch (July 12): Kansas Crop Report (released July 11). "The prospect declined considerably over June 1, and part of the decline is attributed to the wheat straw worm and the Hessian fly." Personally, I think at least 50 per cent of the decline is due to these two insects. In fact, if all the facts were known the wheat straw worm did more damage than it has been given credit for. (July 22): The wheat straw worm has taken a heavy toll of the 1929 Kansas wheat crop. Estimates of loss vary from 10,000,000 to 15,000,000 bushels. Practically all of the State is infested.

A DAGGER MOTH (Acronyctinae)

Pennsylvania

T. L. Guyton (June 26): Report of damage to wheat and oats in Lancaster County by larvae was made June 20. (Determined by C. Heinrich.)

CORN

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

- New Hampshire P. R. Lowry (July 22): Larvae in the fifth instar found in a field at Hudson on July 18.
- Pennsylvania T. L. Guyton (July 20): Adults are emerging in Erie County.
- Ohio T. H. Parks (July 20): The first sweet corn grown in Lucas County was trucked to Detroit market today. It has a few larvae in it, but not very serious yet. More damage is expected to corn that will be harvested in two weeks. Some early sweet corn fields now have about 50 per cent of the stalks with feeding marks on the leaves and larvae from very young to half-grown in the tassels and tops of the plants. A few tassels are already broken. Growers feel that the damage will be somewhat heavier than last year. Late-planted field corn shows no infestation, but in May-planted fields some infestation is visible.
- Guatemala Monthly News Letter, Bureau of Entomology, No. 182, June: Carl Heinrich, specialist in Lepidoptera of the Taxonomic Unit of the Bureau, who left Washington on April 9 to investigate the occurrence of the European corn borer in Guatemala, as reported (Informe del Entom. Oficial, Bol. Agr. Guat., 6 p. 297, 1927), returned June 19. Mr. Heinrich was fortunate enough to be able to examine corn growing in the identical field in the neighborhood of Antigua, from which P. nubilalis was reported. No European corn borer was found, but there was an injurious abundance of the Central American corn borer Diatraea lineolata Wlk. Adult moths were reared from this material and accurately determined as this species.
- STALK BORER (Papaipema nebris nitela Guen.)
- Connecticut W. E. Britton (July 22): Seems to be more abundant than usual in New Haven, Wallingford, Hamden, Orange, Fairfield, and Bethlehem, where it is attacking corn, dahlia, and hollyhock.
- New York C. R. Crosby (June 27): In one or two fields of tomatoes in Nassau County 20 per cent of the plants were killed.
- Virginia W. J. Schoene (July 24): We are receiving complaints from all sections of the State. In some cornfields the injury is said to be conspicuous.
- Ohio T. H. Parks (July 25): Complaints of damage to corn, hollyhocks, tomatoes, peppers, and potatoes are being received from many sections of the State.

- Ohio E. W. Mendenhall (July 19): Field corn and sweet corn in the vicinity of Bremen, Fairfield County, is badly infested.
- Indiana J. J. Davis (July 22): The stalk borer has been quite prevalent, reports coming from many sections of the State with information that various host plants are being attacked, the principal one of which is corn.
- Illinois W. P. Flint (July 22): The damage is certainly above that of normal years.
- Michigan R. H. Pettit (July 12): Reports received daily from all parts of the State.
- North Dakota J. A. Munro (July 22): Moderately abundant on corn, potatoes, tomatoes, dahlia, and other plants in eastern North Dakota.
- South Dakota H. C. Severin (July 20): Specimens are received every day, usually with the fear that it is the European corn borer. Most of the reports come from the eastern part of the State, where it attacks corn, potato, tomato, and dahlia.
- Missouri L. Hoseman (July 22): Nearly mature worms are very abundant.
- Nebraska M. H. Swenk (June 15-July 15): Several reports of young corn plants being attacked were received from Sarpy and Saunders Counties between June 24 and July 8. A Dawson County correspondent reported it as attacking dahlia plants during the first week in July.
- Kansas J. W. McCulloch (July 1): Reports of injury to corn were received from Agra on June 25 and from Augusta on June 19, and injury to tomatoes was reported from Cottonwood Falls June 22.
- CORN EAR WORM (Heliothis obsoleta Fab.)
- Massachusetts A. I. Bourne (July 25): Reports of moderate abundance to very abundant have been received.
- Rhode Island A. E. Stone (July 19): Moderately abundant to very abundant according to the locality from which reported.
- North Carolina Z. P. Metcalf (July 21): Very abundant on corn and tobacco generally over the State.
- Illinois W. P. Flint (July 22): Moderately abundant.
- Nebraska M. H. Swenk (July 19): Moderately abundant.
- Louisiana W. E. Hinds (July 23): The corn earworm is very abundant generally.

Mississippi

R. W. Harned (July 23): Complaints as a pest of corn and tomatoes have been received from all sections of the State during the past month. In some cases serious injury was reported.

FALL ARMYWORM (*Locbryana fra iporda* S. & A.)

Georgia

A. H. Larrimer (July 5): The following was taken from a letter received from O. I. Snapp, dated June 26. "At the request of several farmers in the eastern part of Peach County, I made a trip with the local county agent yesterday to investigate an infestation of worms attacking young corn. I found a very heavy infestation of the fall armyworm in the eastern part of Peach County and in the northern part of Houston County. In one field every corn plant had been ruined. This corn had been planted in a field where wheat had been turned under after hail and wind damage.

O. I. Snapp (June 30): This insect has now shown up in Macon County and is doing much damage to coveys and young corn, especially near Montezuma.

Alabama

H. P. Loding (July 15): The fall armyworm has destroyed many late-planted gladioli in Mobile. I barely saved mine by treatment.

Louisiana

J. E. Hinds (July 23): Still abundant and damaging grass, corn, and cane.

Mississippi

R. W. Harned (July 23): Throughout the latter part of June and all of July, complaints have been received of injury to corn. Specimens have been received from Yazoo, Lauderdale, Kemper, Union, DeFlore, Sharkey, Jefferson, Chickasaw, Bolivar, Forrest, Lincoln, Copiah, and Simpson Counties. The correspondent from Lincoln County stated that these insects had almost completely destroyed a 4-acre field of corn by July 2.

ARMYWORM (*Girphis unibuncta* Haw.)

New York

C. R. Crosby (June 27): A severe outbreak on hay and corn in certain localities in Suffolk County has been reported.

Ohio

T. H. Parks (July): A wire from the county agent of Miami County on June 15 stated that caterpillars were devouring timothy on a farm in his county. Heads were being eaten off and the hay being greatly damaged. The place was visited the same day by H. P. Jones, who found the crop being harvested to save it. Specimens were determined as the true armyworm. Report was received from Marion County that these worms destroyed the heads in a field of timothy there. This is the first serious outbreak in Ohio since 1918.

North Dakota

H. C. Severin (July 20): Armyworms are now leaving small grains and going into corn, as reported from Davison, Hanson, and McCook Counties.

Iowa

C. J. Drake (July 17): Telegram - "Serious armyworm outbreak in northwestern Iowa."

C. N. Ainslie (July 23): Several local attacks are in progress in Woodbury County. The origin of the infestation seems to have been among green oats, where damage has been done. The worms are now nearly grown and are moving into adjoining cornfields that will suffer some loss. Several species of tachinids are busy laying eggs on the larvae and *Apanteles* are also present.

SALT-MARSH CATERPILLAR (Estigmene acrea Drury)

Maine

C. R. Phipps (July 20): Unusually abundant on corn and peas

CHINCH BUG (Blissus leucopterus Say)

Michigan

R. H. Pettit (July 20): The first report of injury came in today. It occurred in Onsted in Lenawee County. Only at intervals of several years does the chinch bug reach Michigan in injurious numbers. This seems to be one of the years.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Maryland

E. N. Cory (July 24): Reported from Harford and Talbot Counties in June and early in July as attacking corn.

North Carolina

Z. P. Metcalf (July 21): Very abundant.

Missouri

L. Haseman (July 22): Very abundant; now pupating.

Louisiana

W. E. Hinds (July 23): Very abundant.

GRAPE COLASPIS (Colaspis brunnea Fab.)

Indiana

J. J. Davis (July 22): Damaging corn at Salem, reported July 13. Beetles reported abundant and feeding on corn at New Albany and English, July 8 and 12 respectively.

SOUTHERN CORN STALK BORER (Diatraea zeacolella Dyar)

Maryland

E. N. Cory (July 24): Reported from St. Mary's County July 17.

Virginia

O. I. Snapp (June 29): A heavy infestation was found today in a cornfield near Fort Valley. (July 18): Damage in a number of cornfields around Fort Valley has been reported since above report.

Indiana

J. J. Davis (July 2): I am sending larvae reported as destroying a 20-acre field of corn at Howe. (determined by C. Heinrich as D. zeacolella.)

CORN SILK BEETLE (Luperodes varicornis Lec.)

Mississippi

R. W. Harned (July 23): Beetles have injured corn and cotton in several sections of the State during the past month. A correspondent at Bucketunna, Wayne County, sent specimens on June 26. He wrote as follows: "These bugs are eating the leaves and squares of cotton. They are also in corn next to this field of cotton, eating the silk and tassels. Other localities from which these beetles have been received are Steens, Hattiesburg, Braxton, Waterford, and Enid.

SOY BEANS

BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

Virginia

P. J. Chapman (July 22): A 10-acre field of soy beans is so heavily infested with C. trifurcata and Diabrotica duodecimpunctata that the grower is cutting the crop prematurely.

LESSER CORN STALK BORER (Elasmopalpus lignosellus Zell.)

Mississippi

R. W. Harned (July 23): On July 2 specimens were sent from Pascagoula, where they were attacking soy beans. Fully 90 per cent of the plants in one field had been injured. Specimens were also found injuring bean plants at Columbus, July 12.

CLOVER AND ALFALFA

ALFALFA WEEVIL (Phytonomus posticus Gyll.)

Wyoming

H. L. Sweetman (July 17): The alfalfa weevil is moderately abundant. No evidence of old infestation at Torrington was found. Slight injury at Casper.

Idaho

C. Wakeland (July 24): Alfalfa weevils are unusually serious in southwestern and southern Idaho. In a small area in Madison County in the upper Snake River Valley spraying was resorted to early in July.

A LEAF BEETLE (Antipus laticlavus Forst.)

Mississippi

R. W. Harned (July 23): Specimens were received on July 2 from Summit, where they were reported as abundant on clover. However, only slight injury had been noticed.

FRUIT INSECTS

JAPANESE BEETLE (Popillia japonica Merm.)

Connecticut

W. E. Britton (July 24): Found only at Bridgeport, where it is moderately abundant.

Weekly News Letter, Bureau of Entomology, No. 182, June: Four large shipments of parasites of the Japanese beetle have been received this month from T. R. Gardner, of the field laboratory at Yokohama, Japan. Two of these shipments consisted of beetle larvae parasitized by the dextiids, Prosona siberita Fab. and Dexia ventralis Aldrich. Two other shipments consisted of Tiphia vernalis Merm. The shipments this year arrived in remarkably fine condition.

A SCARABAEID BEETLE (Strimodanus arboricola Fab.)

Indiana

J. J. Davis (July 22): Beetles were reported June 24 as abundant in an orchard at Michigan City; no statement of damage.

COTTON LEAF WORM (Alabama argillacea Hbn.)

Louisiana

W. E. Hinds (July 17): Telegram - "Report first authentic cotton leaf worms in Lafayette Parish today. Situation indicates widespread and serious stripping may occur soon. I believe Texas and Mississippi also report worms."

This is an index to the possible occurrence of moths in destructive numbers in the fruit districts in the northern States early in September (J. A. R.).

A LACE BUG (Corythucha cydonia Fitch)

Mississippi

R. T. Harned (July 25): A correspondent at Pickens sent on June 27 specimens with the report that they were injuring one of his fruit trees.

APPLE

APHIDS (Aphididae)

New York

C. R. Crosby (July): Fruit aphids, especially the rosy aphid, are very bad and the green aphid is becoming serious.

Minnesota

A. G. Rugelies and assistants (July): Aphids were quite generally abundant on fruit trees, particularly plum.

APPLE APHID (Aphis pomi DeG.)

Ohio

C. R. Phipps (July 20): Moderately abundant on apple in Monmouth County and elsewhere.

- Massachusetts A. I. Bourne (July 25): Moderately abundant to very abundant. There are some bad infestations, especially on young trees. This was late in developing.
- Connecticut W. E. Britton (July 24): Moderately abundant.
- New York C. R. Crosby and assistants (July): Although numerous enough in the Hudson River Valley in Schenectady, Albany, Greene, and Columbia Counties to be causing some apprehension among the growers, and fairly well scattered over the southeastern part of the State, this insect as yet has not done any considerable damage. From the 18th of the month reports of similar conditions were being received from the western part of the State.
- Virginia W. J. Schoene (July 24): Very conspicuous in some orchards. Injury in Frederick County was so pronounced that some growers used nicotine. It is believed that the insect is most numerous in well-cared-for orchards.

- Ohio T. H. Parks (July 25): An outbreak has been upon us this summer. The insect was most numerous from the middle of June until the middle of July. It has now become greatly reduced in numbers and in some orchards has almost disappeared.

ROSY APPLE APHID (Amuraphis rosaeus Baker)

- New York C. R. Crosby and assistants (July): This insect is extremely scarce throughout practically the entire State.
- Connecticut W. E. Britton (July 24): Moderately abundant.
- Virginia P. J. Chapman (July 24): Moderately abundant in home orchards.
- Ohio T. H. Parks (July 25): More damage has developed this year than usual.

WOOLLY APPLE APHID (Eriosoma lanigerum Hausm.)

- Ohio E. J. Mendenhall (July 18): This insect is quite noticeable in nurseries in Fairfield County.
- Illinois J. P. Flint (July 22): Reported as very abundant in many of the young orchards in central and west-central Illinois.

CODLING MOTH (Carpocapsa pomonella L.)

- New York C. R. Crosby and assistants (July): Early in the month side-worm injury was quite prevalent in the lower Hudson River Valley and by the middle of the month this type of injury was becoming noticeable in western New York.

- Virginia P. J. Chapman (July 24): Moderately abundant in home orchards around Norfolk.
- Pennsylvania T. L. Guyton (July 20): Moderately abundant in commercial orchards around Waynesboro.
- Ohio T. H. Parks (July 25): Apple scab and the codling moth have claimed all of the fruit in unsprayed orchards. The spray for the second brood was advised for the week of July 15th at Columbus. Emergence of this brood commenced about July 10th and has been increasing since. The insect is under control in the orchards where the regular spraying schedule has been followed.
- Illinois A. P. Flint (July 22): Injury showed on a little more than the normal per cent of apples at the end of the first brood. Second-brood larvae were entering the fruit at Carbondale July 8. They have been delayed by cool weather. The peak of hatch in central Illinois will not occur before July 25th and a few days earlier in the southern part.
- South Dakota H. C. Severin (July 23): Moderately abundant in the western third of the State.
- Missouri L. Fosman (July 22): Very abundant; peak of second-brood moths occurred about July 18.
- Nebraska M. H. Swenk (June 15-July 15): The first moths of the first brood were noted at Lincoln on June 30.
- Kansas D. Isley (July 1): Less abundant than usual.
- Wyoming H. L. Sweetman (July 17): The codling moth is scarce.
- New Mexico J. R. Eyer (July 16): This insect is very abundant. The second generation is emerging in great numbers.
- Idaho C. Lakeland (July 24): Emergence of the second brood is extremely light and injury should be almost negligible.
- EASTERN TENT CATERPILLAR (Malacosoma americana Fab.)
- Maine C. R. Phipps (July 20): Very abundant; moths caught in light traps at Orono early in July.
- Hale Island A. E. Stone (June 26): Caterpillars were almost entirely absent except in one place in the southern part of the State.
- Ohio E. W. Mendonhall (July 20): Abundant in apple orchards in southwestern Ohio.

YELLOW-NICKED CATERPILLAR (Datana ministra Drury)

Ohio E. J. Mendenhall (July 19): Slight damage has been observed in an apple orchard near Lancaster.

Missouri L. Haseman (July 22): Very abundant; caterpillars are half-grown.

RED-HUMPED CATERPILLAR (Schizura concinna S. & A.)

Missouri L. Haseman (July 22): Very abundant; caterpillars range from one-third to two-thirds grown.

EYE-SPOTTED BUDMOTH (Spilonota ocellana Schiff.)

Washington W. J. Baker (June 25): Larvae were very prevalent in the Puyallup Valley this spring on apple, pear, and some other fruit trees.

FRUIT TREE LEAF ROLLER (Archips arcyrospila Wlk.)

New York C. R. Crosby and assistants (July): Although reported from Orange and Ulster Counties in southeastern New York, in the upper Hudson River Valley, and western New York, this insect is doing but little damage this year.

Nebraska M. H. Swenk (June 15-July 15): Troublesome in Box Butte County on roses, plums, choke cherries, currants, and gooseberries during the third week in June.

LEAFHOPPERS (Cicadellidae)

Maine C. R. Phipps (July 20): Apple leafhoppers (Emponasca mali LeB., E. rosae L., and E. unicolor Gill.) are moderately abundant in Cumberland County.

Rhode Island A. E. Stone (June 26): Apple leafhoppers are showing up in considerable numbers in the northern section of the State and some of the larger orchardists are making vigorous efforts to suppress them.

North Carolina Z. P. Metcalf (July 21): Very abundant in the mountains.

APPLE MAGGOT (Rhagoletis pomonella Walsh)

Maine C. R. Phipps (July 20): Flies were emerging in Kennebec County July 1, and in Penobscot County July 5.

Massachusetts A. I. Bourne (July 25): Comparatively few flies noted to date. Too early to forecast accurately, but indications lead to hope that it will not be so seriously abundant as for the last three or four years.

New York C. R. Crosby and assistants (July): The first flies to be observed this year were seen in Orange and Albany Counties on June 23. By the end of the first week in July this insect had reached the peak and by July 15 the emergence was pretty well completed and flies were decreasing in numbers throughout the lower Hudson River Valley.

Michigan R. H. Pettit (July 12): The apple maggot emerged in Ingham County July 5, at Grand Rapids July 8, and at Hart in Oceana County July 11. We are expecting it out in a few days in the Traverse district. These dates are determined by observations in various parts of the State and warnings are sent to grovers.

CRANBERRY ROOT WORM (Rhabdopterus picipes Oliv.)

New York C. R. Crosby and assistants (July): This insect has been reported from Wayne, Monroe, and Ontario Counties in rather destructive numbers on apples.

ROSE LEAF BEETLE (Nodonota puncticollis Say)

New York C. R. Crosby and assistants (July): This insect seems to be quite prevalent in the lower Hudson River Valley in Orange, Ulster, and Columbia Counties, where it is doing considerable damage to apples.

EUROPEAN RED MITE (Paratetranychus pilosus Can. & Fanz.)

Connecticut P. Garman (July 24): Abundant in some orchards in New Haven and Hartford Counties, where it is attacking apples. If anything, less abundant than usual.

New York C. R. Crosby and assistants (July): This insect was generally below normal throughout the lower Hudson River Valley, but by the end of the month was increasing in numbers.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

South Dakota H. C. Severin (July 20): This insect is moderately abundant in the eastern part of the State.

Nebraska M. H. Swenk (June 15-July 15): In addition to those reports of infestations of apple orchards mentioned in report of May 13, during the period here covered similar reports have been received from Knox and Colfax Counties, where this scale seems to be unusually troublesome this year.

PEAR

PEAR PSYLLA (Psyllia pyricola Forst.)

Connecticut P. Garman (July 24): This insect is reported in average

standings with less abundant than last year in New Haven and Fairfield Counties.

New York

C. R. Crosby and assistants (July): The pear psylla is showing up in threatening numbers in Ulster and Orange Counties, and is also serious in Dutchess and Senessee Counties. By the middle of the month the situation looked rather bad in Ontario and Rensselaer Counties and also in the Niagara district.

PEAR LEAF BLISTER MITE (Eriophyes pyri Egst.)

Indiana

J. J. Davis (July 22): Reported from Mishawaka on July 5.

PEAR MIDGE (Contarinia pyrivora Riley)

New York

C. R. Crosby and assistants (July): The pear midge was reported as very serious throughout Columbia County and damage was being done in some orchards in Ulster County.

PEAR SLUG (Eriocampoides limacina Retz.)

Ohio

E. V. Mendenhall (July 3): The pear slug has been quite abundant in pear stock in one of the nurseries in Montgomery County this spring.

Nebraska

H. E. Swenk (June 15-July 15): From July 4 to the 15, there have been many reports of serious foliage injury to cherry and pear trees in eastern Nebraska, west to Buffalo County.

PEACH

PEACH BORER (Agrotia exitiosa Say)

Ohio

E. V. Mendenhall (July 10): Peach trees in small orchards and in home orchards in southwestern Ohio are considerably damaged.

Illinois

W. P. Flint (July 22): Moderately abundant; emergence began the first week in July at Carbondale.

North Carolina

R. J. Leiby (July 23): Gummy exudations are common in commercial orchards. Trees have not been gassed for two years.

ORIENTAL FRUIT MOTM (Laspeyresia molasta Busck)

Connecticut

P. Gorman (July 24): This insect is more abundant than usual in places in Hartford and New Haven Counties. Parasitism in most heavily infested orchards is under 20 per cent.

W. E. Britton (July 24): Moderately abundant generally, but very abundant in some orchards.

Rhode Island

A. E. Stone (June 26): Peaches in several orchards examined are badly infested. There is likely to be considerable trouble again this year, probably more than last.

New York

C. R. Crosby and assistants (July): Oriental fruit moth injury began to show up in Orange County during the last week in June and by the first week in July was observed in Dutchess, Ulster, and Chautauqua Counties and by the middle of the month in Niagara County.

Maryland

E. N. Cory (July 24): Moderately abundant; varies in different localities.

Virginia

W. H. Schoene (July 24): Peaches in the Crozet and Roanoke sections are being damaged. It is reported that 20 per cent of the varieties now being harvested in the Roanoke section have been damaged.

Pennsylvania

T. L. Guyton (July 20): Very abundant. Twig injury to peach trees scattered over all the orchards where the insect is known to occur.

North Carolina

Z. P. Metcalf (July 21): This insect is very abundant over the whole State.

Georgia

O. I. Snapp (July 19): Infestations have become heavier during the last month near Fort Valley, although little damage has been done.

Ohio

E. W. Mendenhall (July 2): Considerable damage to peach trees in Miami County and apparently in southwestern Ohio is being noticed. Larvae were found in plum also in this section. (July 18): Very bad on peach in Fairfield County; the dying back of twigs is quite noticeable.

T. H. Parks (July 25): The oriental fruit moth is more abundant than last year in most counties. Peaches arriving on the market are wormy and trees show much twig injury. Ottawa County, where the insect was very scarce last year, has no fruit this year, but the insect is common in the twigs there now, according to Mr. Stearns of the Ohio Experiment Station.

Indiana

J. J. Davis (July 22): The oriental fruit moth is increasing in former infested areas and in addition to previous records it has been found at Bedford and Terre Haute, where it was very abundant in peach twigs in a back yard.

Illinois

W. P. Flint (July 22): Moths of the third brood began emerging July 27 in southern Illinois. The infestation is light. There has been a general increase of twig infestation over last year in the peach sections which had practically no in-

jury in 1928. In the original infested territory, Pulaski County, there has been no increase over last year as yet.

Michigan

R. H. Pettit (July 12): Second-generation larvae have appeared in Washtenaw County:

Mississippi

R. W. Harned (July 23): Peach twigs that have evidently been injured by the larvae have been received during the past month from Lauderdale, Quitman, Hinds, Chickasaw, Clay, Pike, Bolivar, and Prentiss Counties.

PLUM CURCULIO (Conotrachelus nemuphar Hbst.)

Maine

C. R. Phipps (July 20): Moderately abundant on apple throughout the fruit districts.

New Hampshire

P. R. Lowry (July 22): Severe injury to apples has been reported from several localities in central and southeastern New Hampshire.

Massachusetts

A. I. Bourne (July 25): Moderately abundant to very abundant. Fully as severe generally over the State as ever.

Connecticut

W. E. Britton (July 24): Moderately abundant.

Rhode Island

A. E. Stene (June 26): Continues to raise havoc with the fruit in many sections of the State and small growers especially are finding it a difficult pest to control.

New York

C. R. Crosby and assistants (July): The plum curculio is quite prevalent and in many cases unusually destructive in the lower Hudson River Valley, damage being very noticeable on cherry. In the Niagara district peaches seemed to have been more seriously damaged than in many years.

Pennsylvania

T. L. Guyton (July 20): Very abundant. It is scattered over all orchards in the infested territory.

Virginia

P. J. Chapman (July 24): Moderately abundant in home orchards near Norfolk.

W. J. Schoene (July 24): The plum curculio has caused more damage to apples and peaches in the fruit sections than for many years. However, much of this will be removed in thinning the fruit.

North Carolina

Z. P. Metcalf (July 21): Very abundant.

R. W. Leiby (July 25): Commercial peach orchards are suffering from curculio injury nearly or quite as bad as in 1921. The severe infestation of ripening peaches is due to a general neglect of orchards because of economic conditions in the

fruit industry during the past two years, making it difficult to pick up drops, and to mild winter, permitting survival of adult curculios.

Georgia O. I. Snapp (July 19): Second-generation larvae caused much damage to the Elberta crop. Other varieties escaped second-brood attack. The infestation in the Georgia peach belt was heavier this year than at any time since 1921, and many complaints of wormy fruit were heard. Again the curculio is a serious problem in Georgia.

Illinois T. P. Flint (July 22): The plum curculio is still moderately abundant and still found in almost as large numbers as at any time this season. Curculios from drop-peach cages have been emerging since June 25, with a peak on July 3, which will be about one month before Elberta harvest. Considerable feeding had been done when put in cages on peach trees.

South Dakota H. C. Severin (July 12): There is very severe damage to plum every year, and this year is no exception.

Missouri L. Haseman (July 22): Moderately abundant; pupation observed July 13 and the first adult observed July 22. Worms are still in plums.

Nebraska M. H. Swenk (July 19): This insect is moderately abundant.

Arkansas D. Isley (July 1): The plum curculio is very abundant.

Louisiana W. E. Hinds (July 23): Very abundant.

SAY'S BLISTER BEETLE (Pomphopoea sayi Lec.)

New York C. R. Crosby (June 20): Specimens on peach have been received from Greene County and on flowers from Ithaca.

FUNGUS ANT (Trachymyrmex septentrionalis obscurior seminole Wheeler)

Mississippi R. W. Harned (July 23): This insect has been reported to have removed lots of foliage from peach trees on a farm 7 miles south of Meridian. This is the first instance of injury of this sort that has come to our attention.

CHERRY

BLACK CHERRY APHID (Myzus cerasi Fab.)

New York C. R. Crosby and assistants (July): The cherry aphid was very serious on sweet cherry in Dutchess County, where the crop was ruined in some orchards. It was also present in considerable numbers in Orange, Ulster, and Greene Counties.

Pennsylvania

C. A. Thomas (July 20): In late May and early June this aphid was abundant on the terminal leaves of cultivated cherries which they curled and stunted.

Ohio

E. W. Mendenhall (July 10): The young shoots and tender growth on sweet and sour cherry in Miami County are badly infested.

CHERRY MAGGOTS. (Rhagoletis spp.)

New York

C. R. Crosby and assistants (July): The cherry maggots appear to be about normally abundant throughout the State.

Michigan

R. H. Pettit (July 12): On June 21, R. cingulata Loew emerged at Grand Rapids, on the 25th at Hart, on the 27th at Traverse City, and four days later out on the Leelanau Peninsula. R. fausta O. S. emerged on the 19th at Gobles.

UGLY-NEST CATERPILLAR (Cacoecia cerasivorana Fitch)

New Hampshire

P. R. Lowry (July 22): Quite common on choke cherry in the southeastern part of the State. Pupating began the latter half of July.

OBSOLETE BAIDED STRAWBERRY LEAF ROLLER (Cacoecia
obsoletana Wlk.)

Michigan

R. H. Pettit (July 12): What appears to be Archips obsoletana Wlk., one of the strawberry leaf rollers, has recently appeared on cherries at Traverse City. The fruit has been attacked in many cases and the pulp eaten down to the pit. Pupae are now in the cages.

PLUM WEB-SPINNING SAWFLY (Neurotoma inconspicua Nort.)

Nebraska

M. H. Swenk (June 15-July 15): This sawfly severely injured the foliage of some cherry trees in the yard of a correspondent at Exeter, Fillmore County, late in June.

PLUM

LESSER PEACH BORER (Sesia pictipes G. & R.)

South Dakota

H. C. Soverin (July 20): This insect is always a severe enemy of the plum tree in eastern South Dakota. This year is no exception.

RUSTY PLUM APHID (Hysteronura setariae Thos.)

Nebraska

M. H. Swenk (June 15-July 15): During this entire period this aphid was troublesome on plums.

RASPBERRY

RASPBERRY FRUIT WORM (Byturus unicolor Say)

Michigan

R. H. Pettit (July 25): This insect has been found in the southwestern part of the State doing commercial damage. Samples have been sent in from Berrien and Van Buren Counties and reports of appreciable losses have been made.

OBSCURE WEEVIL (Sciopithes obscurus Horn)

Washington

S. E. Crumb (June 25): S. obscurus, often accompanied by Brachyrhinus ovatus L. and B. sulcatus Fab., is causing severe injury in raspberry fields around Puyallup. I have observed several infestations in loganberry plants in the Montesano district.

A CURCULIONID (Goodarces melanothrix Kby.)

Washington

W. L. Baker (July 25): I have taken this insect in several raspberry fields in the vicinities of Puyallup and Sumner.

RASPBERRY CANE BORER (Oberon bimaculata Oliv.)

Idaho

E. W. Mendenhall (July 12): Young raspberry canes are affected at Brandt, Miami County.

ROSE STEM GIRDLER (Agrilus viridis L.)

Idaho

E. W. Mendenhall (July 2): In some of the raspberry plantations at Brandt the rose stem girdler is doing some damage and causing the tips to wilt.

RASPBERRY CANE MAGGOT (Pegomya rubivora Coq.)

Minnesota

A. H. Frick (July): I encountered one fairly severe infestation near Grand Rapids.

BLACKBERRY

ROSE LEAFHOPPER (Empoa rosae L.)

Washington

S. E. Crumb (June 25): A leafhopper, apparently E. rosae, is abundant on blackberry at Puyallup and has caused considerable injury to the older leaves.

GRAPE

ROSE CHAFER (Macroductylus subspinosus Fab.)

Massachusetts

A. J. Bourne (July 25): This insect has been very abundant

It attacked crops other than grape and rose more than usual.

Ohio E. W. Mendenhall (July 16): Reported very bad in some of the sections of eastern Ohio, where it is doing considerable damage to grapes.

Michigan R. H. Pettit (July 12): The rose chafer has been worse than usual, perhaps, all over the State.

Nebraska M. H. Swenk (June 15-July 15): The last reports of injury were received from Lincoln County on June 17 and Custer County on June 23.

GRAPE LEAFHOPPER (Ervthroneura comes Say)

Pennsylvania C. A. Thomas (July 20): Leafhoppers have not been important on the grapevines in southeastern Pennsylvania so far this season. Many vines can be found which show none of these insects and no results of their feeding.

Ohio T. H. Parks (July 12): The grape leafhopper is very abundant in many vineyards east of Cleveland in Ashtabula and Lake Counties. The infestation is heavier than for several years, some leaves already showing injury.

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians B. & McD.)

Arizona O. L. Barnes (July 24): There was severe injury to one small vineyard at Glendale as reported July 5.

GRAPE ROOT WORM (Fidia viticida Walsh)

Mississippi R. W. Harned (July 23): Specimens were collected on grapes at Stoneville on June 27. Medium injury was reported.

Nebraska M. H. Swenk (June 15-July 15): A report of serious injury to a vineyard came in late in June as far west as Frontier County.

GRAPE SAWFLY (Erythraspides pygmaea Say)

Mississippi R. W. Harned (July 23): Specimens of the grapevine sawfly were found abundant on grapes at Columbus on June 15.

CURRENT AND GOOSEBERRY

IMPORTED CURRENT WORM (Pteronidea ribesii Scop.)

New York C. R. Crosby and assistants (July): This insect was serious in the lower Hudson River Valley where not treated.

South Dakota H. C. Severin (July 12): This insect is causing more severe damage to currant and gooseberry than usual in eastern South Dakota.

CURRENT FRUIT FLY (Epochra canadensis Loew)

Washington S. E. Crumb (June 25): One small planting of about 60 gooseberry plants in Sumner was so heavily infested that it was difficult to find any uninfested fruits. In general, throughout the Puyallup Valley there seems to be only a light infestation.

CURRENT APHID (Myzus ribis L.)

New York C. R. Crosby and assistants (July): The current aphid has been reported as seriously infesting currant in parts of Orange and Ulster Counties.

GOOSEBERRY WITCH-BROOM APHID (Myzus houghtonensis Troop)

Ohio E. W. Mendenhall (July 25): Work of Houghton's gooseberry aphid is quite noticeable on Houghton gooseberry bushes at New Carlisle.

Indiana J. J. Davis (July 22): Reported from Sheridan July 1.

PECAN

FALL WEBWORM (Hyphantria cunea Drury)

Missouri L. Haseman (July 22): Fall webworms began to attract attention the middle of July.

Louisiana W. E. Hinds (July 23): This insect is increasing in abundance and damaging pecan.

Mississippi R. T. Harned (July 23): Infestations have been more serious this year than for several years. Thousands of pecan and persimmon, as well as other trees, have been completely defoliated.

P. K. Harrison (June 24): The first specimens were collected April 16, and it is more abundant at Picayune than I have ever seen it before. It first began to attack persimmon, and now is very abundant on that plant and pecan.

PECAN NUT CASE BEARER (Acrobasis caryae Grote)

Louisiana W. E. Hinds (July 23): Very serious injury is being done to young pecan nuts throughout the State.

HICKORY SHUCK WORM (Laspeyresia caryana Fitch)

Mississippi

R. W. Harned (July 23): Injured immature pecans have been received recently from Ocean Springs, Moss Point, Pascagoula, and Pass Christian. In each case the correspondents reported that the insects were causing their trees to shed many of their nuts.

PECAN SESIA (Sesia scitula Harr.)

Mississippi

R. W. Harned (July 23): Rather severe injury to a pecan tree at Sherrard was reported on July 6.

A DASYLLID BEETLE (Scirtes tibialis Guer.)

Mississippi

R. W. Harned (July 23): Beetles were reported as very abundant on pecan trees at Ocean Springs on May 22. Little if any injury had been caused.

PHYLLOXERA (Phylloxera spp.)

Louisiana

W. E. Hinds (July 23): More complaints this year than usual of phylloxera and other gall-forming species on pecan, especially from southern Louisiana.

Mississippi

R. W. Harned (July 23): Phylloxera galls continue to attract much attention on pecan trees in various sections of the State. Specimens have recently been received from Adams, Tippah, Bolivar, Harrison, and Pearl River Counties. P. devastatrix Perg. and P. notabilis Perg. seem to be the most abundant species.

GIANT APHID (Longistigma caryae Harr.)

Mississippi

R. W. Harned (July 23): Aphids were collected on pecan trees at Holly Springs and Kewanee recently. The correspondent at Kewanee stated that only one limb of his pecan trees was infested, but that the aphids had completely defoliated that limb.

AN APHID (Monellia costalis Fab.)

Mississippi

R. W. Harned (July 23): Aphids identified by A. L. Hamner were found abundant on pecan trees at Pascagoula on June 17, and at Wiggins on June 15. This species was also abundant on pecan trees at Lucedale on July 12. The correspondent at Lucedale stated that the trees have a varnished appearance due to the honeydew every year, but that apparently no damage is caused.

AN APHID (Myzocallis fumipennellus Fitch)

Mississippi

R. W. Harned (July 23): Severe injury to pecan trees at Wiggins was reported on June 15 by J. P. Kislenko.

CITRUS

MEDITERRANEAN FRUIT FLY (Ceratitis capitata Weid.)

Florida

Plant Quarantine and Control Administration (July 31): In addition to the counties reported last month, the fruit fly has been found in southern Duval County and in the eastern parts of Levy, Hernando, and Pasco Counties, respectively. The total number of infested properties (including town lots) is now about 1,000. No infested Florida fruit was reported as having been discovered at points outside that State during the month.

A poison bait spray is being applied at weekly intervals throughout the infested zones, that is, the area included within one mile of infested premises. Progress has been made in bringing about the total elimination of host fruits and vegetables in the infested zones and in making the protective zones host free for the summer. A most important part of the work under way is that which consists of the elimination of wild and escaped host fruits on uncultivated land.

No host fruits or vegetables were shipped from Florida during July except a limited number of cars of host vegetables (largely peppers and eggplants) from those parts of the State outside infested and protective zones, and a few cars of oranges from cold storage.

AN ANT (Solenopsis saevissima richteri Forel)

Alabama

H. P. Loding (July 15): This ant has for several years done considerable damage to young satsuma orchards and nursery stock by girdling the trees just above the union of stock and graft, evidently to get the oozing sap.

GIRDLED CICADA (Tibicen cinctifera Wbl.)

Arizona

O. L. Barnes (July 24): This species is abundant near Phoenix this summer and doing damage to young citrus trees.

ORANGE THRIPS (Scirtothrips citri Moulton)

California

E. A. McGregor (July): The citrus thrips has been considerably more severe in central California this season than usual. Unprotected orchards will no doubt have a very considerable portion of their crop of oranges badly scarred.

BEEF ARMYWORM (Laphygma exigua Hübner)

Arizona

O. L. Barnes (July 25): The beef armyworm has damaged young citrus seedlings in a nursery near Perryville.

TRUCK - CROP INSECTS

GARDEN WEBWORM (Loxostege similalis Guen.)

- Kansas J. W. McColloch (July 21): The garden webworm is occurring in outbreak numbers in many parts of the State. The State Board of Agriculture reports damage to alfalfa throughout southeastern Kansas.
- Arkansas D. Isley (July 1): Abundant in central and eastern Arkansas.
- Mississippi R. W. Harned (July 23): Specimens have been received during the past month from Boulah, Pace, Yazoo City, and Belzoni on cotton and alfalfa. Slight injury was reported in every case except at Belzoni, where the correspondent stated that the entire field of alfalfa was practically stripped.

ZEBRA CATERPILLAR (Mamestra picta Harr.)

- Maine C. R. Phipps (July 20): This insect is unusually abundant on clover, pea, strawberry, and raspberry.
- Massachusetts A. I. Bourne (July 25): More abundant than usual on cabbage, cauliflower, and allied garden crops. One case where the leaves of rhubarb were being riddled was reported.

SOUTHERN GREEN STINK BUG (Nezara viridula L.)

- Mississippi R. W. Harned (July 23): Serious injury to tomatoes at Escatawpa was reported on July 20.
- Louisiana W. E. Hinds (July 23): Appears to be increasing in abundance and damaging a variety of host plants over last year.

BLISTER BEETLES (Meloidae)

- South Dakota H. C. Severin (July 20): Several species of blister beetles are severely damaging alfalfa, potato, bean, pea, and caragana in many localities in central South Dakota.

MARGINED BLISTER BEETLE (Epicauta marginata Fab.)

- Connecticut R. B. Friend (July 25): More abundant than usual locally in Hamden, where it is attacking Swiss chard.

A BLISTER BEETLE (Epicauta sp.)

- North Dakota J. A. Munro (July 22): A blister beetle is reported to be causing damage to caragana hedges, beans, potatoes, and alfalfa in Ward County.
- Kansas J. W. McColloch (July 18): Injury to gardens by an undetermined blister beetle was reported from Morland.

STRIPED BLISTER BEETLE (Epicauta vittata Fab.)

ansas

J. W. McColloch (July 18): This beetle has caused considerable damage to gardens at Roxford and Delphos. gardens by an undetermined species

TOBACCO FLEA BEETLE (Epitrix parvula Fab.)

anesota

A. H. Frick (July 15): Very abundant in Polk County.

ifornia

A. C. Davis (July 18): Leaves of eggplant are perforated with holes. However, plants are too large for serious injury.

WAVY-STRIPED FLEA BEETLE (Phyllotreta sinuata Steph.)

Mississippi

R. W. Harned (July 23): Beetles belonging to this species were reported as abundant on mustard plants at Tupelo on June 24.

STRIPED FLEA BEETLE (Phyllotreta vittata Fab.)

oming

H. L. Sweetman (July 17): A striped flea beetle, probably this species, destroyed seven or eight acres of field beans in Sheridan County.

FLEA BEETLES (Systema spp.)

Mississippi

R. W. Harned (July 23): S. frontalis Fab. was sent in from Meyersville on June 15, with the following statement: "Very numerous on late plantings and seems to be causing the loss of stands in many sections. The beetles feed on both the top and under surfaces of the leaves." S. elongata Fab. was found eating the shuck around cotton squares at Pace on June 27 and was also abundant on mustard at Tupelo on June 24.

RED SPIDER (Tetranychus telarius L.)

Virginia

P. J. Chapman (July 12): Snap beans of all ages were found badly infested in gardens at Norfolk during the recent dry spell. Soy beans are commonly infested and small areas in some fields show commercial damage. At Onley lima beans are infested, causing stunting and even death of the plants in small areas of a field under observation.

POTATO AND TOMATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

New York

C. R. Crosby and assistants (July): In parts of Suffolk County the Colorado potato beetle was so abundant that the usual sprayings were not sufficient to control the outbreak.

Pennsylvania T. L. Guyton (July 20): More plentiful this year than it has been for several years.

Ohio E. W. Mendenhall (July 10): Potato vines are eaten up in southwestern Ohio.

Minnesota A. G. Ruggles and assistants (July): This insect seems to be more prevalent than usual over the entire potato-growing sections. Reports of unusual abundance were received from Crow Wing, Clay, Hennepin, Renville, Chisago, Brown, Mower, and Blue Earth Counties.

POTATO FLEA BEETLE (Epiditrix cucumeris Harr.)

New York C. R. Crosby and assistants (July): Apparently more abundant than last year in the lower Hudson River Valley and Long Island.

Pennsylvania C. A. Thomas (July 20): Beetles of the second generation are now very abundant in southeastern Pennsylvania. Early varieties are heavily infested. According to G. F. McLeod, Extension Entomologist, many fields of cobbles have died prematurely from their attacks. With the death of the early vines, the insects are migrating to late potato fields.

North Dakota J. A. Munro (July 22): This insect appears to be causing serious injury to potatoes at Fargo.

POTATO APHID (Illinoia solanifolii Ashm.)

New York C. R. Crosby and assistants (July): Late in June potato aphids began to increase on Long Island and by the end of the month had severely injured many plantings.

Pennsylvania C. A. Thomas (July 20): Potato aphids are very numerous in some fields, except where well sprayed. In other fields very few aphids can be found. Thus far parasites are not common.

POTATO LEAFHOPPER (Empoasca fabae LeB.)

Maine C. R. Phipps (July 20): Moderately abundant in Kennebec County.

New York C. R. Crosby and assistants (July): Considerable damage was done to potatoes during the first two weeks in July in Orange County and on Long Island.

Pennsylvania C. A. Thomas (July 20): Very common and injurious on potato leaves, especially on those fields which have not had a regular spray schedule.

- Illinois W. P. Flint (July 22): Very abundant.
- Minnesota A. G. Ruggles and assistants (July): The potato leafhopper became quite prevalent during July. It is reported as very abundant in Winona and Mower Counties and moderately abundant over practically the entire southern quarter of the State.
- South Dakota H. C. Severin (July 20): This insect is very abundant.

CABBAGE

IMPORTED CABBAGE WORM (Pieris rapae L.)

- Indiana J. J. Davis (July 22): Destructive at Dyer; reported July 10.
- North Dakota J. A. Munro (July 22): Very abundant in gardens.
- Missouri L. Haseman (July 22): This insect is very abundant.
- Nebraska M. H. Swenk (July 19): Moderately abundant, the usual number of reports being received.

CABBAGE LOOPER (Autographa brassicae Riley)

- New York C. R. Crosby and assistants (July): This insect is much more numerous than usual in Ontario County and reports of damage have also been received from Monroe and Suffolk Counties.
- Missouri L. Haseman (July 22): Very abundant the last of July.

CABBAGE MAGGOT (Hyalemyia brassicae Bouche)

- New York C. R. Crosby and assistants (July): This insect has caused severe damage to radish and cabbage in Nassau County. In general, the cauliflower crop of Suffolk County does not seem to be suffering. It was also troublesome in Ontario County.
- North Carolina Z. P. Metcalf (July 21): Very abundant in the mountains.
- Minnesota A. H. Frick (July): A considerable number of radish maggots has been observed in Itasca County.

CABBAGE APHID (Brevicoryne brassicae L.)

- New York C. R. Crosby and assistants (July): During the last week in June the cabbage aphid put in its appearance on cauliflower on Long Island and by the middle of the month it had caused considerable trouble. It was also troublesome on cabbage in Ontario County.
- Indiana J. J. Davis (July 22): Abundant on cabbage at Bristol; re-

South Dakota

H. C. Severin (July 12): More abundant than usual and is causing severe injury.

STRAWBERRY

WHITE GRUBS (Polyphylla spp.)

Washington

W. W. Baker (June 25): There has been considerable damage to strawberry plants around Rochester and in Big Harbor by *Polyphylla* larvae. Some acreage was so badly damaged that it was plowed up last year and planted in grain.

STRAWBERRY LEAF ROLLER (Ancyliis comotana Frol.)

Indiana

J. J. Davis (July 22): Very abundant at LaFayette late in June and at Mishawaka July 3.

Washington

W. W. Baker (June 25): A few of these larvae have been found on strawberry plants in the Grand Mount district. The injury this season has been slight.

A MOTH (Ablabia (Cnephasia) longana Haw.)

Oregon

D. C. Mote (July 10): The larvae of this European moth were found feeding in the fruit of strawberry at Oregon City. Adults were reared and sent to Washington for determination. (Determined by Dr. A. Busck)

STRAWBERRY CROWN BORER (Tyloderma fragariae Riley)

Indiana

J. J. Davis (July 22): Reported on July 2 as damaging strawberry at New Albany.

STRAWBERRY ROOT APHID (Aphis forbesi Weed)

Nebraska

M. H. Swenk (June 15-July 15): Reported as troublesome on strawberry during the latter half of June.

LATE STRAWBERRY SLUG (Empria maculata Nort.)

Nebraska

M. H. Swenk (June 15-July 15): The late strawberry slug was injurious to the leaves of strawberry plants late in June in Washington and Holt Counties.

A LEAF BEETLE (Timarcha intricata Hald.)

Washington

W. W. Baker (June 25): Larvae have been found feeding in strawberry plants around Montesano and Grand Mount. They are not present in very large numbers.

PEPPER

PEPPER WEEVIL (Anthonomus eugenii Cano)

exas

R. V. Fletcher (July 18): Reported as practically destroying large patches of sweet peppers at Houston.

alifornia

P. C. Ting (July 18): Four very light infestations in peppers have been found in Orange County, two at Irvine, and two at Talbert. As yet the weevils are not numerous enough to be of any commercial importance.

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror Lec.)

alifornia

A. C. Davis (June 27): These beetles are appearing in numbers from 1 to 5 per pepper plant and have riddled nearly every plant (7,000 plants per acre). They ate up many young plants, but those remaining are too old to be severely damaged.

P. C. Ting (July 18): The leaves of chili pepper are riddled by Systena tenuata Say and D. soror. Plants are large enough so that no commercial damage is being done.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

necticut

E. P. Felt (July 24): There is a general and apparently widely scattered infestation in western Connecticut, since it has been taken at Stamford, New Canaan, Ridgefield, Milten, Westport, Brookfield, and Washington. Most of the infestations observed are in small widely scattered bean patches and in many cases the infestation is limited to a few plants or groups of plants and they are apparently of very recent origin.

York

E. P. Felt (July 24): The Mexican bean beetle has been taken at North Salem.

Weekly News Letter, N.Y. State College of Agr., July 22: Mexican bean beetle grubs were found on beans near Middletown, Orange County, this week.

ensylvania

T. L. Guyton (July 20): Very abundant in the vicinity of Harrisburg, and in fact in most of Pennsylvania, particularly in the southern half.

C. A. Thomas (July 20): Probably arrived in southeastern Pennsylvania in 1927; a few were found in 1922. It is abundant and doing damage in the following counties: Chester, Delaware, Philadelphia, Bucks, and Montgomery, and probably others. The late larval and pupal stages predominate now.

- Maryland E. N. Cory (July 24): Moderately abundant; between generations.
- Virginia P. J. Chapman (July 15): This insect has extended its range over last year. The early damage was probably more important than last year, but dry weather retarded its development in early July and at present it does not appear to be so important as at this time last year. At Walkerton a 375-acre lima bean planting is not so seriously infested as last year. Some 3,500 acres of lima beans are grown for canning near Chertonton and the report is that these plantings have not needed protection from the pest thus far this year.
- North Carolina C. H. Brannon (July 25): The bean beetle is now causing serious injury down to the very coast. Onslow, Carteret, New Hanover, Pasquotank and Currituck Counties all report widespread injury.
- Georgia R. T. Daniel (July 20): While visiting in Washington County I found a number of beetles in the gardens, where they were doing about 50 per cent damage.
- O. I. Snapp (July 16): Lima beans in home gardens near Fort Valley are being ruined.
- Ohio E. W. Mendonhall (July 18): Reported quite bad in Fairfield County, and beans are totally destroyed at Dayton.
- Indiana R. F. Sazama (June 27): I believe this is the first time this insect has been found at Vincennes. Last year it had reached Washington, which is 20 miles east of here.
- Nebraska M. H. Swenk (July 19): Not present in June in western Nebraska, where it was present a year ago.
- Alabama J. M. Robinson (July 23): The Mexican bean beetle is very abundant at Auburn and Piedmont, and in northeastern Alabama. Stiretrus anchorago personatus Germ. was reported from West Blockton as feeding on the larvae.
- Mississippi R. W. Harned (July 23): Has caused more injury to beans in several counties in northeastern Mississippi this year than for several years. It has been reported from Benton County recently for the first time.
- Wyoming H. L. Sweetman (July 17): This insect is scarce.
- New Mexico J. R. Eyer (June 28): The Mexican bean beetle is very abundant throughout the lower Rio Grande Valley.

BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

- Ohio E. W. Mendenhall (July 2): Quite abundant on beans at Brandt.
- Mississippi R. W. Harned (July 23): Reported as moderately abundant on beans at Cruger on June 27.

LIMA BEAN VINE BORER (Monophtila pergratialis Hulst)

- Maryland E. W. Cory (July 24): Reported on July 9 from Salisbury.
- Mississippi R. W. Harned (July 23): Specimens were found seriously injuring lima beans at Meridian July 1.

A MOTH (Lepidoptera)

- Haiti R. C. Smith (July 2): We have observed for the first time a lepidopterous larva boring into the branches of several varieties of beans, beginning at the tips and working down. Severest damage was done to the common red beans of Haiti and a large bean called "pois majock." This damage stops growth and either stunts the plant or spoils the contour. The larvae also bore into the pods. The identity of this insect is not known.

CUCUMBERS AND MELONS

MELON APHID (Aphis gossypii Glov.)

- New York Weekly News Letter, N. Y. State College of Agr., July 22: Melon aphids are appearing in large numbers in some plantings of melons in Chautauque County and are doing considerable injury.

PICKLE WORM (Diaphania nitidalis Stoll)

- Mississippi P. K. Harrison (July 6): This insect is doing severe damage to squash at Picayune and Carriere.
- R. W. Harned (July 23): Caused much injury this season throughout Mississippi to squash, canteloupe, and cucumber.
- Alabama J. M. Robinson (July 27): Canteloupe worms have about completed the destruction of the late July canteloupes in central Alabama.

SQUASH BORER (Heliottia satyriniformis Hbn.)

- Missouri A. C. Burrell (July 24): About 95 per cent of the Hubbard squash in a garden near Jefferson City is ruined.

- Mississippi R. W. Harned (July 23): Serious injury was reported on June 17 from Gulfport, on June 25 from Meridian, and on July 1 from Fondren.
- Connecticut R. B. Friend (July 23): Winter squash appears more heavily infested than usual, and adults and eggs were abundant this month at Hamden.

SQUASH BEETLE (Epilachna borealis Fab.)

- Mississippi R. W. Harned (July 23): Injury to squash was reported on June 26 and 27 from several properties in Vicksburg and on July 4 from Belzoni and Yazoo City. This species was also collected on squash at Picayune on July 6.

ONION

ONION THRIPS (Thrips tabaci L.)

- New York C. R. Crosby and assistants (July): This insect put in its appearance on Long Island during the last week in June and by the first of July was attracting very considerable attention among the growers.
- Virginia P. J. Chapman (July 10): Some cucumber fields near Norfolk became heavily infested with this thrips, resulting in a reduction in yield estimated at from 10 to 35 per cent of the crop. In one field of relatively late cucumbers the infestation was severe at the beginning of harvest and here the decrease in yield would reach 35 per cent.
- Minnesota A. H. Frick (July): Considerable damage has been found in Itasca County.

ONION MAGGOT (Hylemyia antiqua Meig.)

- Indiana J. J. Davis (July 22): Reported damaging onions at Culver, Helmer, and Winamac the last of June. Reports and observations to date, however, show decidedly less trouble than in 1928.
- Michigan R. H. Pettit (July 12): The onion maggot is working in Michigan in many fields.
- Minnesota A. H. Frick (July): Considerable numbers have been found in Itasca County.
- North Dakota J. A. Munro (July 22): First damage reported July 13 and since that time reports have been received from a number of places in Rolette, Ramsey, Traill, and Cass Counties.

SWEET POTATO

TORTOISE BEETLES (Cassidinae)

- diana J. J. Davis (July 22): Larvae were reported attacking sweet potatoes at Shoals July 18.
- uisiana W. E. Hinds (July 23): The two-striped sweet-potato beetle, Metritona bivittata Say, is common on leaves, but not requiring control measures as a rule.
- ssissippi R. W. Harned (July 23): Metritona bivittata Say was reported abundant on sweet potato plants at Philadelphia on June 30, at Lodi on July 6, and at Lena on July 11.

SWEET-POTATO SAWFLY (Schizocerus ebenus Nort.)

- orth Carolina T. B. Mitchell (July 5): An outbreak would possibly have been serious in Currituck County but for dusting operations. A high percentage of parasitism by tachinids is indicated by a few specimens we bred out.
- rginia P. J. Chapman (July 10): Damage necessitating control measures was observed in five sweet potato fields, one at Hickory and the others at Pungo. Many larvae were parasitised.

S O U T H E R N F I E L D - C R O P I N S E C T S

TOBACCO

TOBACCO FLEA BEETLE (Eutrix parvula Fab.)

- onnecticut H. Turner (July 17): Lower leaves of field tobacco are damaged severely and shade tobacco is slightly injured at Windsor.
- orth Carolina Z.P. Metcalf (July 21): This insect is very abundant.

SUGARCANE

SUGARCANE BORER (Diatraea saccharalis Fab.)

- uisiana W. E. Hinds (July 23): The third generation is now starting but is less abundant than usual at this time of year. Colonization of Trichogramma minutum Riley on second-generation eggs is now showing a very encouraging percentage of control.

FOREST AND SHADE - TREE INSECTS

PERIODICAL CICADA (Tibicina septendecim L.)

- West Virginia W. E. Rumsey (July 1): I did not see or hear any 17-year cicadas in the vicinity of Morgantown this year, but Prof. Strawsbaugh declares that he heard the 17-year cicada near Wheeling during June.
- Ohio T. H. Parks (July 8): I put the question of the periodical cicada to our county agent in Champaign County and he made inquiry and I think included the question in the county paper. He wrote recently that all of his inquiries were answered in the negative. On June 17 I put the same question to our entomologists. None had heard of any cicadas.
- Illinois W. P. Flint (July 26): In addition to the records sent in for the appearance of Brood III of the periodical cicada, I also have authentic records from Knoxville, Knox County, Macomb, McDonough County, and Canton, Fulton County.
- Missouri L. Haseman (July 22): A special survey run to determine the distribution of Brood III of the periodical cicada, due to appear in the northern part of Missouri this spring, showed it to be present in abundance or in scattering numbers in the following counties: Clark, Randolph, Putnam, Cedar, Holt, Harrison, Pike, Mercer, and Boone.

GREAT BASIN TENT CATERPILLAR (Malacosoma fragilis Stretch)

- California S. Lockwood (July 9): The Great Basin tent caterpillar has been so numerous around Mt. Shasta City this year that logging trains have experienced considerable difficulty and even trains on the main line of the Southern Pacific have been detained for two or three hours because of the worms on the rails. This Company's officials have equipped an engine with steam jets which they run ahead of their regular passenger and freight trains and blow the worms off the track in order not to delay the commercial trains.

FOREST TENT CATERPILLAR (Malacosoma disstria Hbn.)
WESTERN TENT CATERPILLAR (M. pluvialis Dyar.)

- Washington W. W. Baker (June 25): The tent caterpillars seem to be more numerous this spring than at any time during the last several years. The devastation has been quite serious in most parts of western Washington. Many trees in home orchards have been completely defoliated as well as many shrubs and shade trees. There are numerous infestations in alder in woodland. It is not unusual to find as many as 15 nests in a small tree. Seattle and vicinity seem to be the most severely damaged. In

one instance the caterpillars were so numerous on the rails that a street car in Seattle was unable to stop and suffered a slight crash as a consequence.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Ohio E. W. Mendenhall (July 25): Damage is noticed at Dayton and Lancaster.

Indiana J. J. Davis (July 22): Bagworms were defoliating plum at Brazil, reported July 9, and shade trees at Evansville, reported July 12.

Mississippi R. W. Harned (July 23): Much attention has been attracted during the month in various sections of the State. Among the evergreens on which this insect has been found abundant are arborvitae, Cedrus deodara, juniper, and Colorado spruce.

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma S. & A.)

Ohio T. H. Parks (July 26): The elm trees on the Fort Hayes Army Reservation grounds at Columbus have been partially defoliated. Trees in the remainder of the city have not suffered seriously.

Indiana J. J. Davis (July 22): Caterpillars were abundant on grape at Whiting July 12, and reported on July 17 from Marion, where the adults were issuing from cocoons.

Illinois W. P. Flint (July 22): Very abundant throughout the northern two-thirds of the State. First-brood larvae are now: practically all in cocoons. It has been at least 10 years since the insect was as generally abundant in Illinois.

SATIN MOTH (Stilpnotia salicis L.)

Maine C. R. Phipps (July 2): The satin moth larvae are abundant on poplars in Lewiston.

Rhode Island A. E. Stene (July 19): This insect is less abundant than last year.

Washington C. E. Doucette (June 24): Larvae have been very abundant this year in localities where this insect has become established. During June, 1928, a search for larvae in Puyallup revealed but three or four localities where any larvae were located and their feeding was hardly noticeable. This spring cottonwood and Lombardy poplars generally all over the city are almost completely defoliated. In 1928, in a park in Tacoma, which includes several varieties of poplars in its plantings, damage showed only on cottonwood. Several Lombardy poplars in this park were fed on but slightly. This year every poplar in the park is almost completely defoliated.

A SAWFLY (Fenusa dohrnii Tirsch.)

Washington

W. W. Baker (June 25): The alder saw fly is not quite so numerous as it was at this time last year. It has caused considerable defoliation in scattered localities on alder growing below elevations of 800 to 1,000 feet. The larvae of the first brood are nearly full-grown.

BOXELDER

BOXELDER APHID (Periphyllus negundinis Thos.)

North Dakota

C. W. Ainslie (July 1): The boxelder trees in Mandan are being severely injured by this aphid, many of them nearly dead from the attack. The aphids are being attacked by syrphid flies and several species of coccinellids, but not much impression has yet been made on the pest.

CAMPHOR

CAMPHOR THRIPS (Cryptothrips floridensis Watson)

Mississippi

R. W. Harned (July 23): Camphor leaves showing injury were recently received from several properties at Carriere, Pearl River County.

CATALPA

CATALPA SPHINX (Coratomia catalpae Boisd.)

Ohio

E. W. Mendenhall (July 3): The catalpa trees at Dayton and vicinity are infested. A report of July 2 says the catalpa trees at Brandt are badly infested.

Missouri

L. Haseman (July 22): Reported as very abundant at Joplin, but generally parasitised.

CATALPA MIDGE (Itonida catalpae Comst.)

Indiana

J. J. Davis (July 22): The catalpa midge is abundant at Edinburg as reported July 1 and at Elwood July 6.

ELM

ELM LEAF BEETLE (Galerucella xanthomelaena Schr.)

Ohio

E. W. Mendenhall (July 12): Feeding has been observed in some of the elms at Dayton, and a very severe outbreak is under way at New Carlisle.

A LEAF BEETLE (Monocesta coryli Say)

Maryland E. N. Cory (July 24): Reported from Zedysville, Calvert County.

A LEAF BEETLE (Calligrapha scalaris Lec.)

Nebraska M. H. Swenk (June 15-July 15): During the third week in June reports came to us of serious damage to elm trees in the vicinity of Oxford. During the past spring this species was found abundantly in the vicinity of Tilden, but no reports of injury by the larvae were later received from that locality. Larvae of this species were destructive to elm at Chadron in August, 1914, which indicates a probable double-brooded species in this State.

WOOLLY ELM APHID (Eriosoma americana Riley)

Nebraska M. H. Swenk (June 15-July 15): Troublesome during this period.

WOOLLY APPLE APHID (Eriosoma lanigerum Hausm.)

Wyoming F. T. Boyd (July 12): Very common on elm in eastern Wyoming.

EUROPEAN ELM SCALE (Gossyparia spuria Modeer)

Kansas J. W. McColloch (June 22): An infestation was found in a part of the town of Goodland.

Nebraska M. H. Swenk (June 15-July 15): A new locality of infestation was reported late in June from Hebron, Thayer County.

Wyoming H. L. Sweetman (July 5): All the trees in Cheyenne are infested and some are seriously infested.

HACKBERRY

HACKBERRY NIPPLE GALL (Pachypsylla celtidis mamma Riley)

Nebraska M. H. Swenk (June 15-July 15): One of the most frequently reported galls during the period here covered was the hackberry nipple gall which became conspicuous in several localities early in July.

LINDEN

A MOTH (Chrysoclista linnella Clerck)

New York A. Busck (July 29): This European moth was first discovered in the United States, near New York City, in September, 1928. Its larvae burrow in the woody parts of the linden tree.

LOCUST

LOCUST LEAF MINER (Chalepus dorsalis Thunb.)

Ohio E. W. Mendenhall (July 25): Quite destructive to the locust leaves in central and southwestern Ohio.

MAPLE

NORWAY MAPLE APHID (Periphyllus lyropictus Kess.)

New York Weekly News Letter, N. Y. State College of Agr., July 1: Plant lice have caused a considerable loss of foliage on the Norway maples in Suffolk County.

Pennsylvania C. A. Thomas (July 20): Norway maple aphids, which were so numerous in southeastern Pennsylvania in June, are now quite scarce.

Indiana J. J. Davis (July 22): Maple aphids were reported abundant from Pierceton, Edinburg, Morocco, Terre Haute, Salem, and Portland, from June 21 to July 1.

MAPLE NEPTICULA (Nepticula sciricopeza Zell.)

Connecticut E. P. Felt (July 24): The Norway maple leaf stalk borer and received last year from New Hamburg and White Plains, N.Y. There are reports of probable infestations from other localities. It may cause 10 per cent of the leaves to drop in June. (Determined by Dr. A. Busck, who states that it is recorded as mining the young fruit of Acer in Europe.)

MAPLE BLADDER GALL (Phyllocoptes quadripes Shim.)

Indiana J. J. Davis (July 22): The maple bladder gall is abundant on maple at Wolcottville as reported July 15.

A LEAF-CUTTER BEE (Megachile brevis Say)

Ohio E. W. Mendenhall (July 18): The work of this leaf-cutter is quite prominent in Columbus, on maple and rose.

OAK TWIG PRUNER (Hypermallus villosus Fab.)

Ohio E. W. Mendenhall (July 10): The soft maples in one of the nurseries in Dayton are badly affected.

COTTONY MAPLE SCALE (Fulvina vitis L.)

Indiana J. J. Davis (July 22): Noted at Tipton, New Richmond, Morocco, and Anderson.

Nebraska M. H. Swenk (June 15-July 15): Unusually troublesome this year in central and western Nebraska. It was reported between June 17 and 27 as injuring soft maple trees and a few other plants at Valentine, Chappell, Ord, and Bridgeport.

OAK

OAK UGLY NEST TORTRICID (Cacoecia fervidana Clem.)

Massachusetts J. V. Schaffner, jr. (July 25): This insect was unusually abundant in eastern Massachusetts, especially on Cape Cod. Feeding was confined to scrub oak and sprout-growth scarlet and black oaks.

A SCARABAEID BEETLE (Phytalus sp.)

Alabama H. P. Loding (July 15): This insect is yearly becoming more plentiful. In June this year it was here in great numbers, especially on young oak branches.

A LEAF MINER (Lithocolletis conglomeratella Zell.)

Mississippi R. W. Harned (July 23): Live oak leaves injured were received on May 30 from Hazelhurst and Natchez.

PINE

NANTUCKET PINE MOTH (Rhyacionia frustrana Const.)

Mississippi R. W. Harned (July 23): Serious injury to young pine trees was reported from Winona on July 11.

FIR SAWFLY (Lophyrus abietis Harr.)

Nebraska M. H. Swenk (June 15-July 15): A sawfly larva rather seriously injured a planting of western yellow pine in Kimball County during the last half of June.

A PINE SAWFLY (Neodiprion dyari Rohw.)

North Carolina R. A. St. George (July 24): The pine sawfly which caused considerable injury to pines in this section (Pisgah National Forest) pupated around June 1. Many small trees were completely defoliated, while the needles on the lower branches of the larger, mature ones were eaten. This is the second consecutive season they have been abundant in this section.

A BARK BEETLE (Dendroctonus sp.)

Louisiana

W. E. Hinds (July 23): A species of Dendroctonus is reported as attacking between 10 and 15 per cent of the long-leaf pines on about 1,000 acres near DeRidder. Some trees have died recently.

SOUTHERN PINE BEETLE (Dendroctonus frontalis Zimm.)

North Carolina

R. A. St. George (July 24): Heavy broods overwintered, but they suddenly disappeared during the early spring, following an excess of rainfall. Field observations suggest that excess precipitation just as the adults were maturing, emerging, and attacking was largely responsible for this sudden check in numbers. During the latter part of June and the early part of July, the excess precipitation, accumulated since January 1, was greatly reduced, and therefore, the insect is being noted in increasing numbers lately in certain localities.

CHANGA (Scarteriscus vicinus Scud.)

North Carolina

R. A. St. George (July 24): This insect is quite active in the eastern part of the State, injuring young pine seedlings in the nursery of the State Department of Conservation and Development, near Raleigh. This is believed to be a new host record.

POPLAR

AN APHID (Chaitophorus populella G. & P.)

Wyoming

H. L. Sweetman (July 17): Very abundant at Laramie. The winged forms appeared the first week in July.

SPRUCE

SPRUCE BUDWORM (Harmoloba fumiferana Clem.)

North Dakota

J. A. Munro (July 22): Specimens were received from Jamestown and Aneta during the week of June 24. In general, this insect is scarce.

LONG SPRUCE CONE GALL (Chermes cooleyi Gill.)

Michigan

R. H. Pettit (July 25): A single infestation has been found near Detroit on blue spruce. Evidently this was from a western nursery.

WILLOW

GIANT APHID (Longistigma caryae Harr.)

Pennsylvania

C. A. Thomas (July 20): A number of large groups of this aphid have been found recently on the trunks and larger branches of glaucous or pussy willow, Salix discolor Muhl., growing in a yard near Kennett Square.

POPLAR MOCHA-STONE MOTH (Ichthyura inclusa Hbn.)

Ohio

E. W. Mendenhall (July 3): Willow stock in a nursery at Brookville is badly infested with larvae.

BIM SAWFLY (Cimbex americana Leach)

Ohio

E. W. Mendenhall (July 3): Outbreaks on willow in some sections of Montgomery County have been reported.

YELLOW-SPOTTED WILLOW SLUG (Pteronux ventralis Say)

Ohio

E. W. Mendenhall (July 24): Quite abundant on pussy willow in one of the nurseries in Springfield.

INSECTS ATTACKING GREENHOUSE
AND ORNAMENTAL PLANTS

A correction - The note on Mecas inornata Say attacking sunflower in Mississippi on page 205 of this volume of the Survey Bulletin should have read M. saturnina Lec. (Later determined by W. S. Fisher.)

RED SPIDER (Tetranychus telarius L.)

Maryland

E. N. Cory (July 24): On evergreens all over the State.

Ohio

E. W. Mendenhall (July 24): Quite abundant on willows in Springfield and on evergreens in one of the nurseries at Columbus.

Illinois

W. P. Flint (July 22): Injury is on the increase in central Illinois. Evergreens are suffering most and many other plants are being damaged.

Indiana

J. J. Davis (July 22): Reported as destructive from many points on the usual evergreen hosts and from Jasper, where it is attacking an unknown plant.

Nebraska

M. H. Ewenk (June 15-July 15): Continued troublesome attacks on spruce and cedar during this entire period. The

complaints ranged from Douglas County west to Nance, north to Cuming, and south to Johnson Counties.

Kansas

J. W. McColloch (July 5): Causing damage to foliage of shade trees and shrubs at Ingalls.

PACIFIC RED SPIDER (Tetranychus pacificus McGregor)

California

E. A. McGregor (July): The annual outbreak is well under way. The almost unprecedented hot wave of late June and early July accelerated the development of this red spider, which is one of the major pests of central California, especially of deciduous fruit trees and ornamentals.

A LEAF BEETLE (Colaspis favosa Say)

Alabama

H. P. Loding (July 15): Many complaints of defoliation of ericaceous plants such as azaleas, and blueberries. In one nursery in Baldwin County the inspector noticed that they were attacking weigelas and broad-leaved evergreens.

CHAIN-SPOTTED GEOMETER (Cingilia catenaria Drury)

Massachusetts

J. V. Schaffner, jr. (July 25): A severe local outbreak found in pasture land at Lancaster July 19. Though various plants and shrubs were present, sweet fern, Myrica asplenifolia L., seemed to be the favored food.

ASIATIC BEETLE (Anomala orientalis Waterh.)

Connecticut

R. B. Friend (July 23): The infestation is becoming more widely spread in New Haven and a new infestation was found this year in Bridgeport.

A MILLIPEDE (Scutigera immaculata Newp.)

Pennsylvania

C. A. Thomas (July 30): Symphylids have been very abundant and injurious in several greenhouses at Bustleton and Kennett Square during the past year. They have destroyed the roots of a number of plants, including Calla lilies, sweet peas, Centaurea seedlings, small aster plants, carnation cuttings, etc. In all cases the injury has been to the root system. Most of the damage has been in beds on the ground, but they have also entered pots and fed on the root ball, thus being transferred to raised beds, where they thrive as long as moisture is present.

ARBORVITAE

ARBORVITAE PLANT LOUSE (Lachnus thujaefalinus Del G.)

Ohio

E. W. Mendenhall (July 19): An infestation on arborvitae was found on a private estate in Dayton.

TERRAPIN SCALE (Lecanium nigrofasciatum Perg.)

E. W. Mendenhall (July 29): The terrapin scale is quite bad on arborvitae at Dayton and vicinity.

EUROPEAN FRUIT LECANIUM (Lecanium corni Bouche)

E. W. Mendenhall (July 12): Found on arborvitae trees in nurseries in Clark, Montgomery, and Hamilton Counties.

ASTERS

APHIDS (Aphiidae)

E. W. Mendenhall (July 20): Root aphids, Anuraphis maidi-radiciis Forbes and Trama erigeronensis Thos., are quite bad on aster roots, causing them to wilt and die.

M. H. Swenk (June 15-July 15): The aster root aphid, Aphis middletonii Thos., was reported troublesome during the latter half of June.

CANNA

LESSER CANNA LEAF ROLLER (Geshna cannalis Quaint.)

R. W. Harned (July 23): Quite abundant throughout Mississippi during the past few weeks. In many instances cannas were completely ruined.

LARGER CANNA LEAF ROLLER (Calpodes ethlius Cram.)

R. W. Harned (July 23): Quite abundant throughout the State during the past few weeks. In many cases cannas were completely destroyed.

CHRYSANTHEMUM

CHRYSANTHEMUM GALL MIDGE (Diarthronomyia hypogaea Loew)

R. W. Harned (July 23): Specimens were found on chrysanthemum at Greenwood on June 28. The infestation was cleaned up immediately.

CREPE MYRTLE

A FULGORID (Ormenis septentrionis Spin.)

H. P. Loding (July 15): A fulgorid has been doing con-

siderable damage to young growth of crepe myrtle and other ornamentals in Mobile. They have come in great numbers. I counted as many as 50 adults on a single crepe myrtle branch 3 feet long. An interesting thing is that English sparrows were eating them by the thousands.

HOLLY

HOLLY FIREWORM (Phorobota naevana Kearfoot)

Washington

W. W. Baker (July 25): This insect seems to be general in western Washington and is very serious in several localities. Some trees have been seen with a larva in every young shoot.

IRIS

IRIS BORER (Mocronoctua onusta Grote)

Ohio

E. W. Mendenhall (July 16): Damage in Montgomery and Greene Counties is very severe.

New Hampshire

P. R. Lowry (July 22): Plants badly infested in East Kingston, Durham, and Dover as reported July 16.

IVY

EIGHT-SPOTTED FORESTER (Alypia octomaculata Fab.)

Massachusetts

J. V. Schaffner, jr. (July 22): There are severe local outbreaks in the suburbs of Boston. Boston ivy on the brick walls of a large manufacturing plant was fed on severely. The sections of vines on the walls of the third story and around some of the windows of the first and second stories were entirely stripped of foliage. Woodbine on the walls of one of the buildings of Harvard University was defoliated.

LILAC

LILAC LEAF MINER (Gracilaria syringella Fab.)

Washington

C. F. Doucette (June 25): Larvae of the first brood appear to be practically full-grown. It appears that some unknown factor has destroyed about 75 per cent of the larvae of this brood.

NARCISSUS

NARCISSUS BULB FLY (Merodon equestris Fab.)

Washington

C. F. Doucette (June 25): The first adults were observed in the fields around Sumner on May 13. None have been observed flying since June 19. The flies appeared to be about normal in abundance.

BULB FLIES (Eumerus spp.)

Washington

C. F. Doucette (June 25): Adults are at the present time scarce in the narcissus fields, indicating that the first-brood flies have practically disappeared. The second brood of adults is expected to be at its peak toward the end of July.

BULB MITE (Tarsonemus approximatus narcissi Ewing)

Washington

C. F. Doucette (June 25): Infestations have been found in four plantings of narcissus in western Washington this spring.

PRIVET

A PYRALID (Diaphania quadristigmalis Guen.)

Mississippi

R. W. Harned (July 23): On June 6 a correspondent at Verona informed us that an insect had caused serious injury to a privet hedge. (Determined by S. Schaus.)

SUNFLOWER

A LEAF BEETLE (Nodonota clypealis Horn)

Mississippi

R. W. Harned (July 9): On June 10 a correspondent at Carrollton mailed to us a number of flea beetles that he stated were eating holes in the leaves of sunflower.

TAMARISK

TAMARISK SCALE (Chionaspis etrusca Leon.)

Arizona

O. L. Barnes (July 24): Tamarisk scale is generally abundant on tamarisk trees in the vicinity of Phoenix. Although we receive many reports of abundance of this scale, and requests for aid in control, only a small percentage of the total infested trees have been reported. The two-stabbed ladybird beetle is usually abundant where the infestation is heavy.

VIOLETS

VIOLET SAWFLY (Emphytina canadensis Kby.)

Washington

W. W. Baker (June 25): A heavy infestation was observed on violets and pansies in Aberdeen.

WISTERIA

A LONG-HORNED BEETLE (Lionus crassulus Lec.)

Nebraska

M. H. Swenk (June 15-July 15): Larvae of L. crassulus, which is ordinarily regarded as a borer of the hackberry, were reported on wisteria about mid-June.

YEW

A MOTH (Batodes angustionana Haw.)

Canada

A. Busck (July): This European moth was first collected in North America at Victoria, British Columbia, September 18, 1928. It was reared from larvae found on yew (Taxus baccata).

INSECTS ATTACKING MAN AND
DOMESTIC ANIMALS

MAN

MOSQUITOES (Culicidae)

New Hampshire

P. R. Lowry (July 22): Aedes sollicitans Wlk. is much less abundant than last year in the coast towns owing to the dry season.

Louisiana

W. E. Hinds (July 23): Anopheline mosquitoes appear to be more abundant than usual at this season of the year and cases of malaria are very much more common at New Orleans and at Baton Rouge than they have been for several seasons.

Haiti

R. C. Smith (June 15-25): I have never seen so many mosquitoes (Aedes taeniorhynchus Wied.) in both quiet and running waters as occurred in the Hatte Lathan district the latter part of June. The adults are day biters and made working in that region almost impossible. The clumping of great numbers of larvae into black masses and the habit of many larvae holding to grass blades in running water were new observations to me.

FLEAS (Cterocephalus spp.)

General F. C. Bishopp (July 29): Many reports of house and yard infestations by C. felis Bouche and C. canis Curt. have been received during July. These have come from the following States: Pennsylvania, Maryland, Virginia, New York, New Jersey, Connecticut, Massachusetts, Rhode Island, Ohio, Illinois, and Iowa.

CHIGGERS (Trombicula irritans Riley)

General F. C. Bishopp (July 29): Several reports of severe annoyance from chiggers have been received from the Central States, particularly Ohio, Illinois, and Missouri. About the usual number of complaints have come in from various southern States.

Ohio E. W. Mendenhall (July 16): Chiggers are very troublesome to people in Montgomery County.

Indiana J. J. Davis (July 22): Reported abundant in lawns at Terre Haute July 16.

Missouri L. Haseman (July 22): Beginning to attract serious attention July 20.

SADDLE-BACK CATERPILLAR (Sibine stimulea Clem.)

Mississippi R. W. Harned (July 7): On June 17 a citizen of Natchez handed a specimen to W. L. Gray with the statement: "It occurred on flowering bush, stung my wife and caused fever."

CATTLE

COMMON CATTLE GRUB (Hypoderma lineatum DeVill.)

Vermont J. L. Webb and H. S. Peters (July 6): Out of 230 larvae extracted near Burlington, three of this species were found. This is an unusually late occurrence of this species in this locality.

NORTHERN CATTLE GRUB (Hypoderma bovis DeG.)

New York J. L. Webb and H. S. Peters (July 15): Practically all of the grubs had dropped from the backs of the cattle in the Plattsburg and Herkimer districts by this date. This is from four to six weeks earlier than in 1928.

HORN FLY (Haematobia irritans L.)

North Dakota W. G. Bruce (June 5-July 3): The horn fly was very much

in evidence around Lisbon and east to Wahpeton. An average of 500 per animal was estimated. They were found to be very numerous at Hamilton on July 3, there being from 10 to 12 per animal.

STABLE FLY (Stomoxys calcitrans L.)

Ohio F. C. Bishopp (July 23): Stable flies were reported to be unusually abundant and annoying to dogs in a large kennel at Wickliffe on July 17.

North Dakota W. G. Bruce (June 5-8): Stable flies were noted to be abundant around Lisbon and Wahpeton. From 10 to 15 flies were found on many animals. The flies were not so noticeable around Gardner, Page, Binford, and Cooperstown.

BLACK BLOWFLY (Phormia regina Meig.)

Nebraska M. H. Swenk (June 15-July 15): A Dundy County correspondent on June 19 reported that after dehorning a herd too late, his cattle were seriously bothered by the maggots of a blowfly, probably this species.

HORSES

HORSE FLIES (Tabanidae)

Missouri L. Haseman (July 22): Horse flies are more abundant than I have ever seen them. Two species of greenheads, the large black horse fly, the medium sized brown species, and one species of deer fly, have been especially abundant, no doubt owing to wet spring and favorable breeding weather. These flies have attracted special attention in central Missouri during July.

NOSE BOTFLY (Gastrophilus haemorrhoidalis L.)

North Dakota J. A. Munro (July 22): The nose botfly put in its appearance during the last two weeks in the Red River Valley.

POULTRY

TURKEY GNAT (Simulium meridionale Riley)

Mississippi R. W. Harned (June 25): Specimens sent in on June 18. These gnats occurred in large numbers in Bolivar, Washington, Sunflower, and Coahoma Counties. Chickens were bothered but no deaths had been reported.

FOWL TICK (Argas miniatus Koch)

California

D. C. Farman (July 18): Fowl ticks were found in limited numbers in many places in the Coachella Valley.

STICKTIGHT FLEA (Echidnophaga gallinacea Westw.)

California

D. C. Farman (July 18): These fleas have been reported from one or more places to have been bad at times on young chickens.

HOUSEHOLD INSECTS

ARGENTINE ANT (Iridomyrmex humilis Mayr)

Mississippi

R. W. Harned (July 23): New infestations have been recently discovered in the following places: Cruger, Thomas-town, Fearn's Springs, Vaughan, and 12 miles northwest of Clinton.

TERMITES (Reticulitermes spp.)

Ohio

T. H. Parks (July 26): More complaints than usual have reached us about damage.

Indiana

J. J. Davis (July 22): Reports of damage from LaFayette, Elkhart, Mulberry, and Liberty have been received recently.

Kansas

J. W. McColloch (July 21): Injury is bad in many houses and buildings in Hill City. Dwellings have also been damaged in Jarbalo and Baldwin. An office building is infested at Salina and a grain elevator has been damaged at Pleasanton. At Pittsburg much injury has been done to electric light poles.

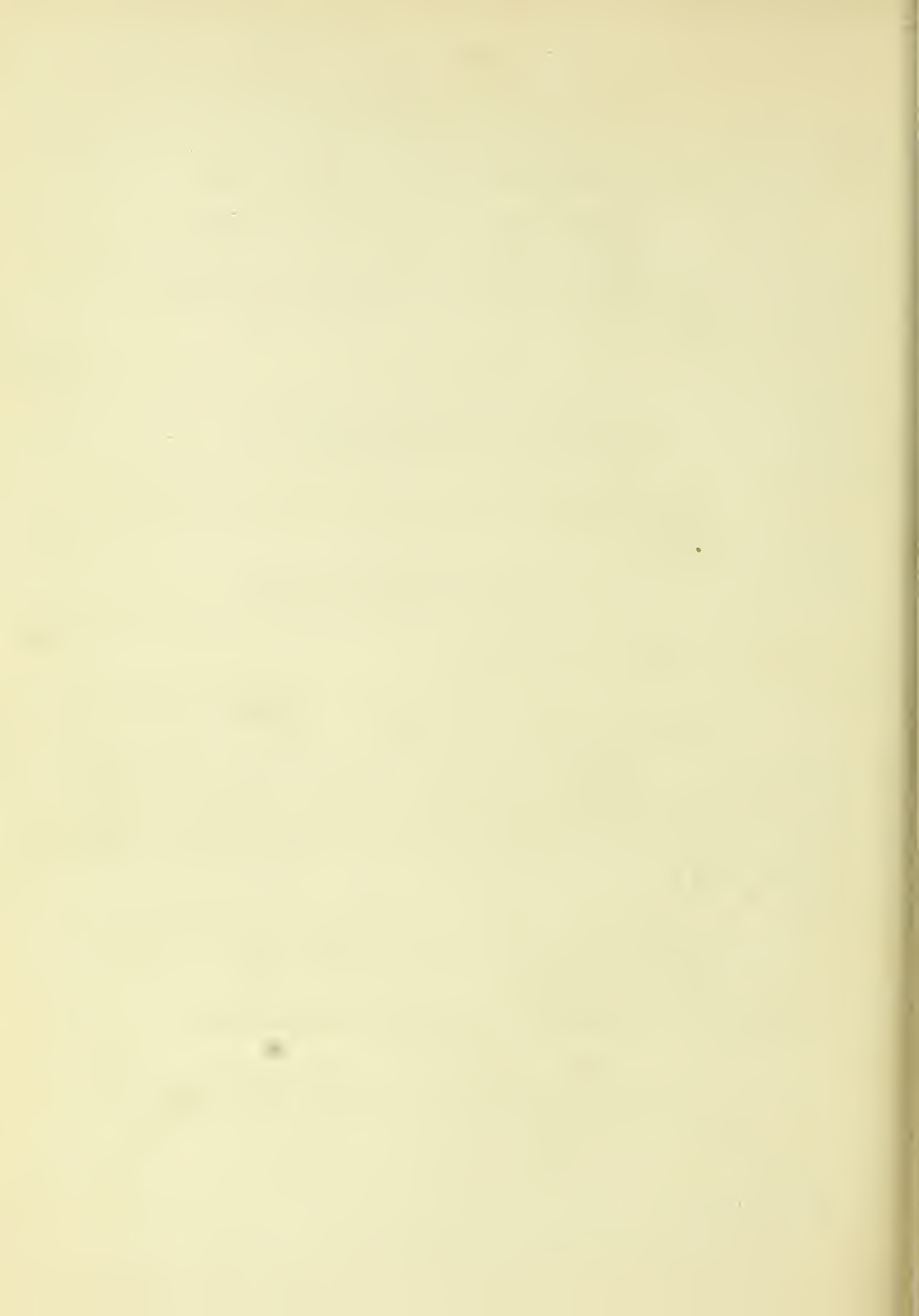
Mississippi

R. W. Harned (July 23): Scores of complaints have been received by the State Plant Board during the past few days and home owners in all parts of Mississippi are being advised to take steps to prevent further loss.

CARPENTER BEE (Xylocopa virginica Drury)

Kansas

J. W. McColloch (July 16): Carpenter bees are proving a serious pest to electric light poles and cross-arms of the Kansas Gas and Electric Company at Pittsburg.



THE INSECT PEST SURVEY BULLETIN

A periodical review of entomological conditions throughout the United States
issued on the first of each month from March to December, inclusive.

Volume 9

September 1, 1929

Number 7

BUREAU OF ENTOMOLOGY
UNITED STATES
DEPARTMENT OF AGRICULTURE
AND
THE STATE ENTOMOLOGICAL
AGENCIES COOPERATING

INSECT PEST SURVEY BULLETIN

Vol. 9

September 1, 1929

No. 7

OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR AUGUST, 1929

The Mediterranean fruit fly inspection during the month disclosed infestations on only seven properties. One of these, at Inverness, Citrus County, brought in a county in which infestation had not previously been determined. During the month very few adults or larvae have been found even within the older centers of infestation.

During the late summer grasshoppers became generally destructive over the greater part of the East Central, West Central, and North Central States with rather heavy damage in scattered localities throughout the region of the Rocky Mountains and the Great Basin.

Very heavy losses due to the depredations of wireworms on potatoes and grain have occurred in southwestern Idaho. In one single potato plantation the actual loss caused by reduction in grade due to wireworm injury amounted to \$125 per acre.

A serious outbreak of the bertha armyworm, apparently more intense in the northeastern corner of the State, is reported from the northern third of North Dakota.

A preliminary survey of the Hessian-fly situation in New York indicates that in the important wheat-growing counties the infestation is extremely light, only about 1.3 per cent of the straws, on an average, being infested.

The corn root worm is causing severe lodging of corn in many localities in the East Central and West Central States.

A report from Georgia indicates that the apple maggot was found for the first time in that State in August.

The oriental fruit moth is reported as generally serious from Connecticut southward to Georgia and westward to Illinois and Mississippi. In many parts of this region the percentages of infestation ran very high. Reports from the Bureau of Entomology's laboratory at Moorestown, N. J., indicated that parasitism in that district was running from 80 to 100 per cent.

The Mexican bean beetle is still being reported as generally very destructive over the entire infested territory.

The banded cucumber beetle has been found quite numerous at Vista, Calif., and it appears to be moving northward in that State.

A species of tussock moth (Hemerocampa pseudotsugata McD.) is defoliating and killing large areas of Douglas fir in the Payette National Forest in Idaho.

This season seems to be one of unusual abundance of the bagworm throughout the Middle Atlantic and East Central States westward to Kansas.

The fall webworm is decidedly more abundant throughout New England, New York State, and Missouri this year.

The pine butterfly is very abundant over large areas of the Payette National Forest in Idaho, which may indicate the approach of another epidemic.

A very serious infestation of the sheep botfly is reported from Arizona, where, out of a flock of 9,000 sheep, 1,200 were killed.

OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR AUGUST, 1929.

Local outbreaks of the bertha armyworm have been reported from sections of southern Manitoba and southern Alberta, chiefly affecting sweet clover, alfalfa, and flax.

The greasy cutworm occurred in outbreak form in the St. John River Valley, New Brunswick, affecting a variety of field and garden crops. A brief survey of potato fields for 30 miles south and 80 miles north of Fredericton along the St. John River Valley showed that injury was most common in the region near Fredericton and was seemingly confined to the broad valley extending from Oromocto to Zealand.

The worst infestation in some years of the cabbage flea beetle is being experienced all over Vancouver Island, British Columbia.

Reports indicate that the wheat stem maggot is widespread over the western half of Manitoba.

Outbreaks of turnip and cabbage aphids have been reported from sections of New Brunswick, southern Ontario, and the Okanagan Valley of British Columbia.

Larvae of the plum curculio have rarely been more abundant in early peaches in the Niagara district, Ontario. They have also been reported as causing considerable injury to plums locally in the Gaspereaux Valley, Nova Scotia.

Present indications are that the oriental peach moth will cause serious losses in peach orchards of the Niagara peninsula, Ontario, particularly in Niagara Township.

The green apple aphid has been present in outbreak form in the Annapolis Valley, Nova Scotia, and the Niagara district, Ontario. It also has caused considerable injury particularly to young trees in the Okanagan Valley, British Columbia. In addition, the black cherry aphid caused severe injury to sweet cherries in the Niagara district, and the rosy apple aphid has been abundant in the eastern Annapolis Valley, Nova Scotia.

Tussock moths are widespread in the Annapolis Valley, Nova Scotia, and are causing considerable damage by gnawing holes in the fruit in apple orchards.

The fall webworm is present in conspicuous numbers in many sections of Nova Scotia and Ontario and in the Lower Fraser Valley, British Columbia.

The apple sucker has been recorded for the first time in the St. John River Valley, New Brunswick, outbreaks having been discovered in western Kings County.

The apple and thorn skeletonizer is widespread in the Annapolis Valley, Nova Scotia, and has also been found in neglected apple orchards at Grimsby and Beamsville in the Niagara district, Ontario.

The outbreak of the hemlock looper on the North Shore of the St. Lawrence, about 50 miles below the mouth of the Manacouagan River, at Trinity Bay, Quebec, is extending very rapidly and probably about 1,000,000 cords of balsam spruce pulpwood are being destroyed. Other outbreaks of this species in balsam pulpwood stands are in progress at Godbout and Pentecote on the North Shore, and are reported from other valleys along the coast of the St. Lawrence River and the Gulf of St. Lawrence, extending as far as Labrador.

An outbreak of a species tentatively determined as the black-headed tip moth (Peronia variana Fern.) is affecting balsam and spruce over an area of 200 square miles in southern Cape Breton Island, Nova Scotia. Seventy per cent of the trees are infested and severe injury is being done during the present season. This is the first year that this species has appeared in outbreak form.

A very extensive outbreak of the jack-pine sawfly (Neodiprion banksiana Rohwer) has been reported from the Capreol district of northern Ontario.

Scouting for the gipsy moth in the Province of Quebec this season has failed so far to reveal any evidence of the pest.

GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

- Florida J. R. Watson (August 21): Grasshoppers are moderately abundant and doing considerable damage to young citrus trees.
- Indiana J. J. Davis (August 1): Reported riddling flower-garden plants at Michigan City.
- Illinois S. C. Chandler (August 14): Moderately abundant at East St. Louis.
- W. P. Flint (August 19): Quite a little damage to red-clover fields is occurring in the west central counties of the State. The damage is not general, but indicates an upturn in the abundance of these insects. Melanoplus atlanis Riley and M. differentialis Thos. are present.
- Minnesota A. G. Ruggles (August 24): Grasshoppers seem to be very abundant in parts of the State and should have a good start next year. It is very dry in some areas.
- North Dakota J. A. Munro (August 23): Grasshoppers are very abundant, attacking alfalfa, grain, and garden crops in limited areas of Ward, McLean, Burleigh, Morton, and Golden Valley Counties.
- Nebraska M. H. Swenk (July 15-August 1): Grasshoppers continued active in gardens near Lincoln the latter part of July. Injury to alfalfa in Buffalo and Logan Counties was reported the third week of July.
- Kansas J. T. McColloch (August 17): Considerable damage has been reported from Macksville and Belleville. At both places the damage was a general invasion of many types of plants. (August 25): Melanoplus differentialis Thos., M. atlanis Riley, and M. bivittatus Say are moderately abundant to very abundant in northwestern Kansas.
- Arkansas D. Isely (August 22): Melanoplus differentialis Thos., M. femur-rubrum DeG., and M. atlanis Riley are moderately abundant over the whole State.
- Montana W. B. Mabey (August 20): Melanoplus femur-rubrum DeG. and M. mexicanus bivittatus Say are moderately abundant in the eastern half of the State.
- Idaho C. Wakeland (August 20): The relationship between grasshoppers and tachina parasites has been changing during the last two seasons. Since 1922 grasshopper infestations have been low and injury slight because of heavy parasitism. In 1928 parasites were noticeably less abundant and populations

of grasshoppers increased materially in many sections. This season parasites are few and grasshoppers are much more abundant. Injury is being done in many parts of Idaho, especially to small seed crops, and it appears likely that damage will be heavy and that extensive control measures will have to be undertaken.

Nevada G. G. Schweis (August 20): Very abundant in the eastern part of the State.

Utah G. F. Knowlton (July 24): Very abundant 3 miles south of Joseph.

H. J. Pack (July 27): Very abundant in Tooele County.

Arizona O. L. Barnes (August 16): Grasshoppers are moderately injurious to the tender foliage of young citrus.

WIREWORMS (Elateridae)

Nebraska M. H. Swenk (July 15-August 1): Melanotus cribulosus Lec. was reported in corn roots the last half of July from Richardson and Madison Counties.

Idaho C. Wakeland (August 20): Heavy losses have occurred to potatoes and corn as well as extensive injury to grains and other crops on which it is more difficult to tabulate losses. Many cornfields in southwestern Idaho have been planted two or three times and some of them abandoned, and in many fields the stand is 50 per cent or less. In a potato field examined last week, 5 carloads of rurals were dug on 12 acres. Of these, 1 carload graded U. S. No. 1, and 4 cars graded No. 2. The grower received for the car No. 1, \$600, and for the 4 cars No. 2, \$900. The reduction in grade was due entirely to wireworms, a loss of \$1,500, or \$125 per acre. This is typical of what is happening in many other instances.

Washington W. W. Baker (August 21): Moderately abundant in Pierce and Grays Harbor Counties.

California E. O. Essig (August 21): Moderately abundant.

BERTHA ARMYWORM (Barathra configurata Walk.)

North Dakota J. A. Munro (August 7): There is an outbreak in Rolette Towner, Cavalier, Pembina, Walsh, and Ramsey Counties, and an isolated outbreak in Ward County. Fields of flax showed about 15 per cent injury and some sweet-clover fields were totally destroyed. In 1928 only Rolette and Towner Counties were seriously infested. It is very dry this season, which is a reverse of last. (August 23): Nelson, Grand Forks, and Burke Counties have been added to the list in which outbreaks are found.

CEREAL AND FORAGE - CROP INSECTS

WHEATHESSIAN FLY (Phytophaga destructor Say)

New York

C. R. Crosby (July 31): In a preliminary survey counts of 25 straws from each locality indicate the following infestation

County	Number of localities	Average per cent age of straws infested.
Cattaraugus	1	0.0
Cayuga	10	2.8
Chautauqua	1	0.0
Erie	6	2.7
Genesee	11	0.7
Livingston	54	0.8
Monroe	13	2.2
Niagara	14	1.7
Onondaga	4	4.0
Ontario	6	0.7
Orleans	12	0.7
Seneca	9	0.9
Tompkins	5	1.6
Wayne	9	1.3
Wyoming	7	1.7
Yates	8	0.0

Average of entire region 1.3 per cent.

Maryland

P. D. Sanders (August 22): Scarce.

Illinois

S. C. Chandler (August 14): A survey of counties near East St. Louis shows 12 per cent of culms in stubble infested and 75 per cent parasitism.

Minnesota

A. G. Ruggles and assistants (August 16): Moderately abundant in Brown County.

Missouri

L. Haseman (August 26): Moderately abundant and threatens to prove destructive this fall.

Kansas

J. W. McColloch (August 25): Moderately abundant generally.

SMUT BEETLE (Phalacrus politus Melsh)

Nebraska

M. H. Swenk (July 15-August 1): The smut beetle has been reported abundant in wheat fields in Morrill County the third week in July.

CORN

ARMYWORM (Cirphis unipuncta Haw.)

Minnesota

C. Matthews (August 18): Armyworm reported from Cottonwood County.

Iowa

C. N. Ainslie (July 27): Outbreaks seem numerous in north-western Iowa. Each infested locality is rather small, only a few fields being invaded with no concerted movement in any general direction. Great variation in size of larvae, and many already mature and pupating in some numbers. Enemies are busy.

Nebraska

M. H. Swenk (July 15-August 1): The armyworm was the worst pest from July 22 to 29, appearing in four different areas in northeastern Nebraska and causing considerable loss to corn and oats. In all cases the worms started with the oats and when this was stripped, migrated to corn, which was injured less severely. In all cases the outbreaks occurred on land that was damaged by hail between June 15 and 25. The parasites began to control them about July 27 and their activities, with the completion of development of the worms, stopped the outbreaks with the close of July.

CORN EAR WORM (Heliothis obsoleta Fab.)

Massachusetts

A. I. Bourne (August 22): Somewhat more abundant than usual, being found moderately to very abundant.

Ohio

T. H. Parks (August 2): Very abundant in the early sweet corn near Columbus. Almost every ear is damaged. At Marietta the loss in early market corn was heavy. This is a repetition of the infestation of 1927 when early corn was infested more severely than late corn.

Illinois

W. P. Flint (August 19): Damage to tomatoes is heavy for this early in the season.

C. C. Compton (August 10): Occasional fields of corn in Cook County are infested as much as 5 per cent.

Nebraska

M. H. Swenk (July 15-August 1): Numerous reports of injury to tomato fruits were received during this period.

Kansas

J. W. McColloch (August 25): Very abundant, many fields having as high as 95 per cent infestation.

Mississippi

C. Hines (August 21): Moderately abundant in Yazoo and Sharkey Counties.

Louisiana

W. E. Hinds (August 22): The corn ear worm is very abundant.

Texas F. L. Thomas (August 23): The fourth generation is now causing injury in the southeastern section of the State.

FALL ARMYWORM (Laphygma frugiperda S. & A.)

South Carolina M. H. Brunson (August 29): Very abundant in Sumter, Lee, Partington, Florence, and Lexington Counties.

Mississippi F. A. Smith (August 21): Abundant on young corn in Tate, Panola, and Quitman Counties.

C. Hines (August 21): Moderately abundant in overflowed areas in Yazoo, Sharkey, and Issaquena Counties.

R. W. Harned (August 22): A correspondent at Corinth reported on August 16 that this insect was destroying grass in a cowpea field at that place. Injury to corn and sugarcane has also been reported recently from Columbia, McComb, and Senatobia.

Texas F. L. Thomas (August 23): This insect has ruined a number of late cane plantings in Fort Bend and Austin Counties.

STALK BORER (Papaipema nebris nitela Guen.)

Massachusetts A. I. Bourne (August 22): Moderately abundant.

Connecticut W. E. Britton (August 24): Seemingly more abundant than usual, reports of damage to corn, tomato, and dahlia in Durham, Winsted, Orange, New Haven, Hamden, and Waterford having been received.

Indiana J. J. Davis (August 27): Specimens were received from North Manchester July 30 and Hammond August 9, attacking dahlia, and from Washington August 7, Salem August 14, and Aurora August 13, attacking corn.

Minnesota A. G. Rugles and assistants (August): Reported as moderately abundant in the southwestern part of the State.

Missouri L. Haseman (August 26): Borers moderately abundant. Larvae are nearly mature and some are pupating, but a large percentage is failing to mature.

Nebraska M. H. Swenk (July 15-August 1): Continued to receive reports of injury to corn, especially from Knox County. Also some reports from Butler, Cass, and Fillmore Counties.

Kansas J. W. McColloch (August 20): Injury to corn was reported from Iola on July 20 and from Irving on August 2.

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

New Hampshire

P. R. Lowry (August): No increase in infestation; all infested fields have less than 1 per cent of stubble attacked.

New York

Weekly News Letter, N. Y. State College of Agr., August 5: Damage can be plainly detected in Chautauqua County.

Michigan

R. H. Pettit (July 29): Reports from near Monroe state that Macilla maculata DeG. has been keeping the corn borer down appreciably.

LESSER CORN STALK BORER (Elasmopalpus lignosellus Zell.)

Mississippi

R. W. Harned (August 22): Serious injury to corn was reported from Liberty on July 13, and from Crystal Springs on August 1.

Arizona

O. L. Barnes (August 16): Considerable damage to young sorghum plants at the Sacaton Experiment Station has been reported.

CORN ROOT APHID (Anuraphis maidi-radicis Forbes)

Indiana

J. J. Davis (August 27): The corn root aphid was destructive to corn at Charlestown as reported on July 30.

Nebraska

M. H. Swenk (July 15-August 1): A 130-acre cornfield in Boone County was found heavily infested the third week in July.

CORN LANTERN FLY (Peregrinus maidis Ashm.)

Texas

F. L. Thomas (August 23): An insect, probably P. maidis, is appearing in very large numbers at the base of leaves and causing severe injury to late corn 6 miles south of Brazoria.

CORN ROOT WORM (Diabrotica longicornis Say)

Indiana

J. J. Davis (August 27): This insect was causing corn to fall at Newport as reported August 7.

Kansas

J. W. McColloch (August 20): Severe lodging of corn due to this worm has occurred at Junction City, Virgil, Ottawa, and Grenola.

Missouri

L. Haseman (August 26): Adult beetles are now appearing in great numbers throughout the State and some farmers are complaining of them and inquiring what they are.

SOUTHERN CORN STALK BORER (Diatraea zeacolella Dyar)

Maryland

P. D. Sanders (August 22): Reported from Baltimore on August 13.

- South Carolina M. H. Brunson (August 29): This insect is very abundant.
- Kansas J. W. McColloch (August 12): A bad infestation was found at Winfield.

CORN BILLBUGS (Sphenophorus spp.)

- Missouri L. Haseman (August 26): County agent A. J. Renner, of Benton has reported an unusually serious outbreak of two species of corn billbugs on late corn in southeastern Missouri. He reports that they practically destroyed some fields of corn, which is very unusual for billbugs this late in the summer.

VELVET BEANS AND SOY BEANS

VELVET BEAN CATERPILLAR (Anticarsia gemmatilis Hbn.)

- Florida J. R. Watson (August 21): This insect has appeared as far north as Gainesville in destructive numbers, ragging up the velvet beans badly and also stripping soy beans.

POTATO LEAFHOPPER (Empoasca fabae Harr.)

- North Carolina Z. P. Metcalf (August): Very abundant in the northeastern part of the State, especially on soy beans and peanuts.

COWPEAS

COWPEA CURCULIO (Chalcodermus aeneus Boh.)

- Georgia O. I. Snapp (August 16): This insect is causing considerable damage to cowpeas at Barnesville.

SORGHUM

SORGHUM WEBWORM (Celama sorghiella Riley)

- Texas F. L. Thomas (August 23): Rather abundant in the eastern half of the State and causing injury as far south as DeWitt County.

CLOVER AND ALFALFA

CLOVER SEED MIDGE (Dasyneura leguminicola Lint.)

- Minnesota R. McCann (August 6): Abundant in red clover and moderately abundant in alsike in Lake of the Woods County.
- Idaho C. Wakeland (August 20): Less injurious than last season.

Washington W. W. Baker (August 21): Moderately abundant at Puyallup.

GARDEN WEBWORM (Loxostege similalis Guen.)

Iowa C. J. Drake (August 21): The garden webworm is doing a great deal of damage to alfalfa in the counties of Harrison, Page, Ringold, and Shelby. A large number of new alfalfa fields have been completely devastated. Some damage is also done to corn and one farmer reported that a 30-acre field of soy beans had been totally destroyed.

Missouri L. Haseman (August 27): The webworm is proving quite destructive to alfalfa in the west-central part of the State. At Columbia it has been fairly common but has done no serious damage. A brood of the worms is nearly mature at this date, August 27.

Kansas J. W. McColloch (August 23): Severe injury to alfalfa has occurred at Olivet, Ellsworth, Glade, and Hays.

F R U I T I N S E C T S

APPLE

APHIDS (Aphidae)

Massachusetts A. I. Bourne (August 22): In a few cases a late-season infestation is appearing, especially on young trees.

New York Weekly News Letter, N. Y. State College of Agr., August 19: Fruit in Niagara County will be reduced more by the rosy aphid and the green aphid than all other pests combined.

Minnesota A. G. Ruggles and assistants (August): Aphids have been reported as very abundant on apple, plum, and shrubbery.

APPLE APHID (Aphis pomi DeG.)

Maine C. R. Phipps (August 26): Moderately abundant on young trees.

Virginia W. J. Schoene (August 26): In July a report was made of a severe infestation in apple orchards in several sections of the State. The aphids have now disappeared. The heavy infestation followed a spell of wet weather that caused succulent growth to terminals of bearing orchards. During the past few weeks the weather has been relatively dry.

CODLING MOTH (Carpocapsa pomonella L.)

New York Weekly News Letter, N. Y. State College of Agr., August 5: Will be severe in poorly sprayed orchards in Ontario County.

- Maryland P. D. Sanders (August 22): Second-brood worms are becoming destructive.
- Illinois S. C. Chandler (August 14): First pupation occurred at Carbondale on August 6.
- Missouri L. Haseman (August 26): Codling moth is moderately abundant at Columbia, St. Joseph, Morrisonville, Waterly, etc. Second-brood worms are not so abundant as was expected, but bad enough.
- Nevada G. G. Schweis (August 20): This insect is causing injury to at least 75 per cent of the fruit near Reno.
- Idaho C. Wakeland (August 20): Height of emergence of second-brood moths occurred August 4 this year and July 23 last. Spring emergence was unusually early in relation to the development of apples, but an extended rainy, cool period following the calyx spray delayed and lessened development until infestation from first-brood moths was unusually light. Because of late emergence of second-brood moths, spraying has had to be continued late in many cases.
- Washington W. W. Baker (August 21): Moderately abundant in Pierce and Grays Harbor Counties.
- E. J. Newcomer (August 21): Owing to the late season, the second brood is not so numerous as usual. Fruit should be cleaner than last year.

YELLOW-NECKED CATERPILLAR (Datana ministra Drury)

- Ohio E. W. Mendenhall (August 1): An outbreak has been found in a nursery on apple stock at Lancaster.
- Indiana J. J. Davis (August 27): Defoliated young apple trees at Morgantown August 6 and linden and apple trees at LaFayette August 12.
- Missouri L. Haseman (August 26): This worm has continued to appear in destructive numbers on young apple trees during the month. Newly hatched colonies were observed on August 26.
- RED-HUMPED CATERPILLAR (Schizura concinna S. & A.)
- Ohio E. W. Mendenhall (July 31): Found in apple stock in a nursery at Circleville. The trees are entirely stripped.
- Missouri L. Haseman (August 26): This worm has continued to appear in destructive numbers on young apple trees during the month.

APPLE AND THORN SKELETONIZER (Hemerophila pariana Clerck)

New York

Weekly News Letter, N. Y. State College of Agr., August 19:
Has invaded the eastern portion of Niagara County, where injury is noticeable on unsprayed trees.

PISTOL CASE BEARER (Coleophora malivorella Riley)

West Virginia

L. M. Peairs (August 22): An unusual outbreak of this insect has been reported from Charlestown.

EUROPEAN RED MITE (Paratetranychus pilosus C. & F.)

Massachusetts

A. I. Bourne (August 22): Infestation was, as usual, rather spotty, the overwintering eggs in some orchards being very abundant and in others almost absent.

New York

Weekly News Letter, N. Y. State College of Agr., August 19:
Injury is slight, but may be found in several orchards in Orange County..

Washington

E. J. Newcomer (August 21): These spiders appear to be more numerous than usual.

PACIFIC FLAT-HEADED BORER (Chrysobothris mali Horn)

Arizona

O. L. Barnes (August 16): We have had two complaints of severe injury to rose bushes. One apple orchard was damaged extensively. Several peach and apricot trees were killed and many others made worthless from the production standpoint. All reported from Phoenix.

ERMINE MOTH (Eyponomeuta malinellus Zell.)

New York

S. B. Fracker (July 24): From a letter from B. D. Van Buran. "Inspector J. A. Maney, while inspecting seedlings imported last winter and planted this spring in a nursery in Wayne County, found 20 nests of ermine moth caterpillars. Also found a few colonies the last of June and the first of July. Though these have been found every year for 15 years, the pest is not established so far as is known."

APPLE MAGGOT (Rhagoletis pomonella Walsh)

Massachusetts

A. I. Bourne (August 22): Reports state that comparatively few railroad-worm flies have been seen as yet and these chiefly on early varieties. Some growers who have been considering this pest their worst for the last few years are not finding it at all serious this season.

New York

Weekly News Letter, N. Y. State College of Agr., August 5 and 19: Early apple varieties containing maggots may be found

in Dutchess County, but there are few in commercial orchards. A few flies still are seen on apple trees in Orange County. Maggots have done some damage to early varieties in at least one orchard in Ontario County.

Georgia

M. W. Yeomans (August 27): The apple maggot was found for the first time in the State at Blue Ridge this month.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Georgia

O. I. Snapp (August 16): Infestation in the Georgia peach belt is lighter than usual at this season of the year.

Indiana

J. J. Davis (August 1): Reported killing peach trees at Milltown.

Nevada

G. G. Schweis (August 20): Moderately abundant at Reno, but no serious damage has been observed.

Kansas

J. W. McColloch (August 25): Moderately abundant to very abundant in districts where it occurs.

Arkansas

D. Isely (August 22): Moderately abundant in northwestern Arkansas.

Idaho

C. Wakeland (August 20): Much scale in commercial orchards this summer owing to excessively windy weather delaying dormant spraying so much that some of the growers had to stop spraying because foliage was too far advanced.

PEAR

PEAR PSYLLA (Psyllia pyricola Foerst.)

New York

Weekly News Letter, N.Y. State College of Agr., August 5 and 19: This insect is reported in sufficient numbers to cause trouble if the proper conditions exist in Niagara, Ulster, and Ontario Counties.

RUSTY LEAF MITE (Phyllocoptes schlechtendali Nal.)

Washington

E. J. Newcomer (August 21): This mite is very numerous on pear and prune in the Yakima Valley and is doing considerable damage. The leaves of pear trees are curled and browned, while the leaves of prunes curl upward and some of the fruit drops.

KATYDIDS (Locustidae)

Maryland

P. D. Sanders (August 23): Katydidids have done about 12 per cent damage to ripening Bartlett pears in a commercial orchard.

PEACH

PEACH BORER (Aegeria exitiosa Say)

- New York Weekly News Letter, N. Y. State College of Agr., August 5:
Adults are emerging in Orange County.
- Georgia M. S. Yeomans (August 27): Adults are emerging in moderate
abundance.
- O. I. Snapp (August 6): Infestation is very heavy at Tal-
bottan as a result of improper use of paradichlorobenzene.
Many trees in two orchards are dying.
- Alabama T. A. Ruffin (August 26): Very abundant.

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

- Connecticut P. Garman (August 24): Reported as attacking peach in New
Haven and Hartford Counties. Increasing in abundance in some
sections and decreasing in others. Macrocentrus sp., Eubadi-
zon sp., and Glypta rufiscutellaris Cress. have been observed
attacking the larvae.
- New York Weekly News Letter, N.Y. State College of Agr., August 5 and
19: Injury is severe in some orchards in Niagara County and
is also noticeable in Dutchess and Ulster Counties.
- New Jersey L. B. Smith (August 27): The fruit infestation in this
district (Moorestown) as obtained from counts of 11,000 peaches
in 14 orchards has been:

Greensboro	3 per cent	July 13 to 17.
Carmen	3 " "	July 30 to August 7
Hiley	11 " "	August 12 to 22
Elberta	11 " "	August 21 to 22.

Invisible injury in midseason peaches runs higher than the visible, being 8 per cent in the Hiley and 9 per cent in the Elberta. Observations made at the oriental peach moth laboratory indicate that parasitism of the twig-infesting larvae continues very high as during the past three years, averaging for the south Jersey peach district approximately 80 per cent; 100 per cent parasitism has been obtained from numerous midseason collections. Macrocentrus ancylivora Roh. remains the dominant species. M. delicatus Cress. is much more abundant than heretofore, and is the second most important species. Glypta rufiscutellaris Cress. is much less abundant than last year. The egg parasite Trichogramma minutum Riley has so far attained less than 10 per cent parasitism, with an exceedingly spotty distribution.

- Pennsylvania T. L. Guyton (August 21): Moderately abundant over the State.
- Maryland P. D. Sanders (August 23): More numerous than last year at this time. Some orchards are more seriously injured than others.
- Virginia W. J. Schoene (August 26): This insect is taking its toll in the various peach sections where it is established. Damage ranging as high as 15 to 20 per cent is not unusual.
- West Virginia L. M. Peairs (August 22): Very abundant all over the State. Now emerging.
- North Carolina Z. P. Metcalf (August): Very abundant over the State.
- C. H. Brannon (August 20): Caused serious injury to apple twig tips in a large block of trees in Henderson County.
- South Carolina M. H. Brunson (August 29): Very destructive, especially in the upper Piedmont section of the State.
- Georgia O. I. Snapp (August 16): Reports of considerable damage in orchards in the northern part of the State have been received at the laboratory. Considerable twig injury to non-bearing trees was observed today at Thomastown and Crest.
- M. S. Yeomans (August 27): Found in great abundance breeding in apples.
- Ohio E. W. Mendenhall (August 2): Very destructive in Fairfield County, especially in some of the large orchards.
- Indiana J. J. Davis (August 27): Was found at LaFayette and Anderson during the month.
- Illinois S. C. Chandler (August 14): Fourth-brood larvae began entering the fruit shortly before Elberta harvest. Infestation in Pulaski County, the point of first-discovered infestation, is about the same as in 1928. An increase in fruit infestation in the other peach sections of southern Illinois has been noted according to results of a survey made just previous to harvest, but no commercial damage will occur in Elberta outside of Pulaski County.
- W. P. Flint (August 19): Infestation was about the same in extreme southern Illinois as it was last year, Elbertas at harvest time showing from 20 to 25 per cent infestation.
- Kentucky M. L. Didlake (August 27): This insect is very abundant on peach, plum, and young apple trees in many widely scattered localities.

- Alabama W. A. Ruffin (August 26): This insect is very abundant.
- Mississippi R. W. Harned (August 22): Peach twigs that have evidently been injured by the larvae have been received during the past month from Hinds, Pike, Prentiss, Coahoma, Tippah, and Yazoo Counties. (August 28): Found in the following new localities: Columbus, West Point, Aberdeen, and Nettleton. Reported by Mr. M. R. Smith.
- PLUM CURCULIO (Conotrachelus nenuphar Hbst.)
- Maine C. R. Phipps (August 26): Moderately abundant over the State.
- Massachusetts A. I. Bourne (August 22): The plum curculio continues to be the outstanding problem generally over the State. With few exceptions, it appears to be fully as serious as in 1928 and some growers have reported it to be worse. Many of the growers are applying the special 10-day spray.
- Connecticut P. Garman (August 24): The plum curculio has been reported as attacking apple in New Haven County in greater numbers than at this time last year.
- New Jersey T. J. Headlee (August 1): The plum curculio is moderately abundant.
- Maryland P. D. Sanders (August 23): Has been abundant on the Eastern Shore until this time.
- Virginia W. J. Schoene (August 26): The outstanding damage during August was the outbreak in the peach section of Albemarle County. Many reports were received from the peach sections of the State during the early months of the summer, but with the exception of Albemarle County the damage was ended in the early part of the season. This insect became unusually numerous, causing heavy losses to the peach growers. This is the only outbreak in Virginia for many years.
- North Carolina Z. P. Metcalf (August): Very abundant over the State.
- South Carolina M. H. Brunson (August 29): Very abundant in various sections of the State.
- Georgia O. I. Snapp (August 16): Many growers are using post-harvest applications to reduce the source of infestation for the next season. Unless a systematic program of control measures is enforced between now and the harvest of the 1930 peach crop, another heavy loss is expected. Georgia peach orchards are now harboring the heaviest population of adults in years.
- Illinois S. C. Chandler (August 14): There has been much late injury in peaches in southern Illinois, running as high as 20 per

cent in some sprayed orchards. Jarring records in sprayed and unsprayed orchards showed the maximum number of curculios July 29, about one week before the start of the Elberta harvest. Just as the harvest started a big drop took place in the number. This has taken place every year since jarring records have been made in the State.

Kentucky

M. L. Didlake (August 27): Moderately abundant generally on peach and plum.

Alabama

W. A. Ruffin (August 26): This insect is very abundant.

Arkansas

D. Isely (August 22): The plum curculio is very abundant.

RASPBERRY

RASPBERRY FRUIT WORM (Byturus unicolor Say)

Michigan

R. H. Pettit (July 29): Raspberry fruit worms have been very prevalent in the southwestern corner of the State and have done appreciable damage to basket and canning red raspberries. The infestations are spotted up to the present. The worst damage seems to be in Berrien and Van Buren Counties.

GRAPE

EIGHT-SPOTTED FORESTER (Alydia octomaculata Fab.)

Nebraska

M. H. Swenk (July 15-August 1): On July 26 a report of severe damage to grapevines was received from Benedict.

ACHEMON SPHINX (Pholus achemon Drury)

Arizona

O. L. Barnes (August 16): Achemon sphinx adults and larvae have been reported on grapevines and Virginia creeper in Phoenix.

GRAPE LEAFHOPPER (Erythroneura comes Say)

Nebraska

M. H. Swenk (July 15-August 1): Grape and woodbine vines were reported to be heavily attacked in central Nebraska during this period.

BLUEBERRY

CHAIN-SPOTTED GEOMETER (Cingilia catenaria Drury)

Maine

C. R. Phipps (August 26): An outbreak has been observed in Cumberland County, where many acres of blueberry land has been defoliated.

PECAN

AN APHID (Myzocallis fumipennellus Fitch)

Georgia

T. L. Bissell (August 23): This aphid is more abundant than in 1928 at Barnesville, but as yet no appreciable damage has been observed.

HICKORY SHUCK WORM (Laspeyresia caryana Fitch)

Georgia

T. L. Bissell (August 23): A small number of pecans continue to drop because of shuck-worm injury. There will be a heavy infestation at Experiment and Barnesville by the last generation in nuts gathered at harvest. Some Stuart pecans are found with deformations in the shell caused by shuck worms.

Mississippi

R. W. Harned (August 22): More complaints in regard to injury to pecans have been received at this office than during any time in recent years.

FALL WEBWORM (Hyphantria cunea Drury)

Mississippi

R. W. Harned (August 22): The second generation appeared early in August and seems to be slightly heavier in most sections than the first generation.

C. Hines (August 21): The second generation is now very abundant in Yazoo, Madison, Sharkey, Humphreys, and Issaquena Counties. The first specimens of this generation were found on August 9.

G. I. Worthington (August 22): Found on peach and apple at Shelby and general on pecan and persimmon over the Delta.

Louisiana

W. E. Hinds (August 22): Very abundant on pecan and wild growth.

PECAN WEEVIL (Balaninus caryae Horn)

Georgia

T. L. Bissell (August 23): Emergence of adults from the soil around Experiment and Barnesville continues and there continues to be feeding in the later maturing varieties of pecans with consequent shedding of nuts. Weevils have started ovipositing in Stuart pecans, the first eggs being found August 20. Infestation of Stuarts appears to be about the same as in 1928; of Schley, about one-half as heavy.

A CURCULIO (Conotrachelus sp.)

Georgia

T. L. Bissell (July 26): A species of Conotrachelus has been ovipositing in pecan nuts at Experiment and Barnesville.

Oviposition and subsequent feeding by the larvae cause nuts to drop prematurely. The first drops caused by this insect were found July 3. Of 1,318 premature drops collected at Barnesville July 3 to 17, 9 per cent were infested by *Conotrachelus*.

HICKORY NUT CURCULIO (*Conotrachelus affinis* Boh.)

Mississippi

R. W. Harned (August 22): A large number of complaints in regard to an insect that has been tentatively identified as *C. affinis* and that has caused pecans to drop from the trees have been received during the past few weeks.

FIG

A GREEN JUNE BEETLE (*Cotinis texana* Casey)

Arizona

O. L. Barnes (August 16): The green peach beetle is abundant in the Salt River Valley and in many cases serious injury has been reported to figs, peaches, and grapes.

POMEGRANATE

LEAF-FOOTED BUG (*Leptoglossus phyllopus* L.)

Arizona

O. L. Barnes (August 16): Nymphs were observed in moderate numbers on pomegranates near Phoenix. The injury to pomegranates was severe last year.

CITRUS

MEDITERRANEAN FRUIT FLY (*Ceratitis capitata* Wied.)

Florida

Plant Quarantine and Control Administration (August 31): The inspection during the month disclosed infestation on only seven properties. One of these in Inverness, Citrus County, brought in a county in which infestation had not previously been determined. Extensive inspection and trapping have failed to disclose infestations other than those mentioned above, and during the month very few adults or larvae have been found, even within the old centers of infestation. Under date of August 20, the Secretary approved a revision of the quarantine and regulations which becomes effective September 1. The new quarantine establishes an eradication area which includes those areas previously defined as infested and protective zones. The eradication area as defined in the quarantine includes the entire counties of Brevard, Citrus, Flagler, Hernando, Hillsborough, Lake, Marion, Orange, Pasco, Pinellas, Putnam, Seminole, Sumter, and Volusia. Also all of St. Johns

County except parts of two townships in the northeastern corner, four townships in the southeastern part of Duval County, the eastern half and the southwestern corner of Clay County, about one township in the southeastern corner of Bradford County, the two eastern tiers and parts of the two southern tiers of Alachua County, the eastern third of Levy County, all of Osceola County except the southern two tiers of townships, and all of Polk County except four townships in the southeastern corner.

During the month, field scouting has been continued in the Southern and Western States. No field infestation or infested fruit has been found as a result of this scouting.

A PYRALID (Mvelois venipars Dyar)

Arizona

O. L. Barnes (August 16): This insect has been reported from scarce to moderately abundant in several groves of navel oranges in the Salt River Valley. In most cases it attacked diseased or injured fruit. All infestations reported were in navel oranges.

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Florida

J. R. Watson (August 21): More abundant than for several years.

Louisiana

W. E. Hinds (August 22): The citrus whitefly is very abundant.

TRUCK - CROP INSECTS

SOUTHERN GREEN STINK BUG (Nezara viridula L.)

Mississippi

R. W. Harned (August 22): Many complaints have been received recently regarding injury to peas and butterbeans from practically all sections of the State.

POTATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

Illinois

C. C. Compton (August 15): The Colorado potato beetle is less abundant than normal in Cook County.

Minnesota

A. G. Ruggles and assistants (August): This insect is reported as moderately abundant over most of the southern third of the State and it is reported as very abundant in Polk, Carlton, and Aitkin Counties.

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

- New Hampshire P. R. Lowry (August): Beetles are quite common in many potato fields visited in Merrimack County.
- Massachusetts A. I. Bourne (August 22): Prof. Whitcomb reports this insect very abundant on potatoes and tomatoes.
- Washington W. W. Baker (August 21): Adults are very abundant in some potato fields in Lewis, Grays Harbor, Thurston, Pacific, and Mason Counties. No observations have been made in any other counties excepting Pierce and King, where there are moderate infestations. Some tuber injury is present in all fields examined.

A FLEA BEETLE (Epitrix subcrinita Lec.)

- Washington W. W. Baker (August 21): Found in all potato fields examined but in no case did the abundance equal that of E. cucumeris Harr. (See above note.)

MOLE CRICKETS (Gryllidae)

- Kentucky M. L. Didlake (August 27): Mole crickets are seriously damaging potato tubers at Ashland.

POTATO LEAFHOPPER (Empoasca fabae Harr.)

- Maine C. R. Phipps (August 26): Moderately abundant over the State.
- New Hampshire P. R. Lowry (August): Hopperburn combined with long drought is seriously injuring many plots of potatoes in Merrimack County.
- Massachusetts A. I. Bourne (August 22): This insect is becoming very abundant.
- Minnesota A. G. Ruggles and assistants (August): This insect has been reported as moderately abundant over most of the southern third of the State and it is reported as very abundant in Polk, Carlton, and Pipestone Counties.

CABBAGE

IMPORTED CABBAGE WORM (Pieris rapae L.)

- Missouri L. Haseman (August 26): Along with the rather severe epidemic of the imported cabbage worm, the cabbage looper has continued to do considerable damage during the month.

HARLEQUIN BUG (Murgantia histrionica Hahn)

Florida

J. R. Watson (August 21): The harlequin bug is moderately abundant.

Mississippi

R. W. Harned (August 22): Serious injury to cabbage was reported on August 5 from Meridian. A correspondent at Kil-michael wrote on August 8 that these insects were seriously injuring collards and other garden plants.

Louisiana

W. E. Hinds (August 22): This insect is moderately abundant.

Arkansas

D. Isley (August 22): Moderately abundant over the State.

CABBAGE APHID (Brevicoryne brassicae L.)

Illinois

C. C. Compton (August 1): Occurring in fewer than normal numbers in Cook County owing to long, heavy parasitism.

CABBAGE MAGGOT (Hylemyia brassicae Bouche)

Massachusetts

A. I. Bourne (August 22): Prof. Whitcomb reported that this insect appeared early and probably caused more loss than usual because of delay in applying treatment.

STRAWBERRY

CYCLAMEN MITE (Tarsonemus pallidus Banks)

Massachusetts

A. I. Bourne (August 22): Prof. Whitcomb reported, "Many strawberry plantings are heavily infested in spots. Eggs were exceedingly abundant on June 22."

STRAWBERRY LEAF ROLLER (Ancylis comptana Froel.)

Indiana

J. J. Davis (August 27): This insect is abundant at Kokomo as reported August 7.

ASPARAGUS

ASPARAGUS BEETLE (Crioceris asparagi L.)

South Carolina

M. H. Brunson (August 29): Moderately abundant. Now found in Bamberg, Orangeburg, Barnwell, Saluda, Calhoun, and Aiken Counties.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

Connecticut

W. E. Britton (August 24): Specimens have been found in
Danbury, Shelton, and...

- New York Weekly News Letter, N.Y. State College of Agr., August 5:
The Mexican bean beetle is doing much damage in isolated
spots in Chautauqua County.
- New Jersey T. J. Headlee (August 1): The Mexican bean beetle is moder-
ately abundant and damage is heavy in some places.
- Pennsylvania T. L. Guyton (August 21): Found all over the State. We
do not have a record of its occurrence in Pike and Wayne
Counties, but I strongly believe it is present in both those
Counties.
- Maryland P. D. Sanders (August 22): This insect is moderately abun-
dant.
- West Virginia L. M. Peairs (August 22): Moderately abundant, but less
than usual, at Morgantown.
- North Carolina Z. P. Metcalf (August): Reported as very abundant over the
whole State as reported by C. H. Brannon.
- South Carolina M. H. Brunson (August 29): This insect is unusually de-
structive over the entire area affected.
- C. H. Brannon (August 29): Adult specimens received from
Pamlico County.
- Georgia C. I. Snapp (August 16): Practically every patch of beans
in Fort Valley has been seriously damaged. It has also
caused considerable damage to the bean crop in Meriwether
County.
- Ohio E. W. Mendenhall (July 21): There have been severe attacks
in Columbus and vicinity. These do not seem general, but
here and there some patches have been totally destroyed.
- Indiana J. J. Davis (August 27): Although reported destructive in
several localities in southern Indiana, no new localities
were recorded.
- Mississippi R. W. Harned (August 22): Serious injury to garden beans
has been reported from Tippah, Benton, Itawamba, Alcorn, and
Lee Counties. Soy beans at Corinth were also seriously in-
jured. (August 28): Found in the following new localities:
Hatley, Old Athens, Quincy, and Splunge by M. R. Smith and
J. C. Harris.
- Alabama W. A. Ruffin (August 26): Moderately abundant at Auburn.
- Utah H. J. Pack (July 27): This insect is moderately abundant
in the southern part of the State.

BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

Mississippi

G. I. Worthington (August 22): This insect is generally present in Washington, Bolivar, Sunflower, and Coahoma Counties. Damage on beans and field peas noticeable, but not serious.

RED SPIDER (Tetranychus telarius L.)

Maryland

P. D. Sanders (August 23): The red spider is doing considerable damage to lima beans on the Eastern Shore.

CUCUMBERS AND MELONS

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Indiana

J. J. Davis (August 27): Several reports of serious damage have been received recently.

Ohio

E. W. Mendenhall (July 31): Considerable damage is caused to cucumber and melon plants in Fairfield County.

Arkansas

D. Isely (August 22): This insect is very abundant.

PICKLE WORM (Diaphania nitidalis Stoll)

Indiana

J. J. Davis (August 1): Very abundant and destructive to pickles in Dearborn County.

Mississippi

R. W. Harned (August 22): Many complaints have been received during the past month in regard to injury to cantaloupes from practically every section of the State.

MELON APHID (Aphis gossypii Glov.)

Arizona

O. L. Barnes (August 16): This aphid is abundant in some fields near Phoenix and doing considerable damage to water-melons, especially late plantings.

Ohio

E. W. Mendenhall (July 31): Injury very severe on melons and cucumbers in Fairfield County.

Indiana

J. J. Davis (August 27): Reported during the month as destructive at North Salem, Thayer, and Macy. (A. cucumeris Forbes.)

SQUASH

SQUASH BORER (Melittia satyriniformis Hbn.)

Massachusetts

A. P. Morse (August 2): A severe outbreak has been reported near Salem.

ONIONS

ONION THRIPS (Thrips tabaci L.)

New York Weekly News Letter, N. Y. State College of Agr., August 5:
Doing considerable damage to onions in Orange County.

Illinois C. C. Compton (August 7): More destructive to onions than
at any time since 1921. Severely injured about an acre of
cabbage adjoining onion fields where the onions had been har-
vested.

PEPPER

BANDED CUCUMBER BEETLE (Diabrotica balteata Lec.)

California A. C. Davis (August 16): Several taken in a few minutes at
Vista, but no estimate was made of actual numbers present
per plant. This species seems to be moving northward in
California.

BEETS

BEET LEAFHOPPER (Eutettix tenellus Bak.)

Montana W. B. Mabey (August 20): The beet leafhopper is scarce.

Idaho C. Wakeland (August 20): Little injury to beets excepting
in districts near the natural breeding grounds.

Nevada G. G. Schweis (August 20): No commercial plantings of
sugar beets this year.

Utah G. F. Knowlton (August 11): Most parts of northern Utah
are suffering very little from the beet leafhopper and curly
top. The most severe curly-top damage in this section is at
Thatcher, Hooper, Penrose, and Bothwell, and occasional fields
in other districts. Leafhoppers are very abundant in some
desert breeding areas on deserted dry farms.

H. J. Pack (July 27): Scarce to moderately abundant in
beet sections.

MARGINED BLISTER BEETLE (Epicauta cinerea marginata Fab.)

Maryland F. M. Wadley (August 1): Beets in a garden at Brandywine
are almost defoliated in spots.

SWEET POTATO

A MOTH (Herse cingulata Fab.)

Mississippi

R. W. Harned (August 22): Larvae were collected at McComb from sweet-potato plants on July 23. The correspondent wrote that these insects ate up the vines of 6 acres of his sweet potatoes. Specimens were also found injuring sweet-potato plants at Kokomo, on July 24.

S O U T H E R N F I E L D - C R O P I N S E C T S

A Correction - The note on Epitrix parvula Fab. by N. Turner on page 251 of this volume of the Insect Pest Survey Bulletin relates to E. cucumeris Harr.

SUGARCANE

SUGARCANE BORER (Diatraea saccharalis Fab.)

Florida

J. R. Watson (August 21): More abundant than a year ago.

Louisiana

W. E. Hinds (August 22): Generally much less abundant than the average. Third generation developing. Trichogramma minutum Riley now destroying about one-half of borer eggs in the southern part of the cane belt and increasing their control to nearly the maximum of 95 to 98 per cent in some fields where the wasps were colonized on second-generation eggs.

Texas

F. L. Thomas (August 23): Causing severe injury to late corn and also damaging cane, in the coastal section.

F O R E S T A N D S H A D E - T R E E I N S E C T S

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma S. & A.)

Ohio

E. W. Mendenhall (August 2): Quite bad on shade trees on the State House grounds at Columbus.

Illinois

W. P. Flint (August 19): The first brood was quite abundant throughout central Illinois. This brood, however, was heavily parasitized and apparently the second brood will not be so numerous as the first.

A TUSSOCK MOTH (Hemerocampa pseudotsugata McD.)

Idaho

C. Wakeland (August 20): Large areas of Douglas fir in the Payette National Forest are being defoliated and killed. Lar-

vae and pupae collected are heavily parasitized by dipterous and hymenopterous insects which have not yet emerged. (Determined by C. Heinrich.)

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Washington, D.C. W. Middleton (August 2): The bagworm is extraordinarily abundant in this section.

West Virginia L. M. Peairs (August 1): The bagworm is very abundant in northern West Virginia.

South Carolina M. H. Brunson (August 29): The bagworm is moderately abundant on arborvitae at Greenville and Newbury.

Ohio E. W. Mendenhall (August 2): The attack of the bagworm in Fairfield and Pickaway Counties is quite severe.

Indiana J. J. Davis (August 1): Reported abundant at Winamac, Terre Haute, and Connersville. At the latter two places conifers were being attacked. Winamac is farther north than the usual occurrence of this insect. (August 27): Attacking rose and other shrubs and trees, including cedar, at Indianapolis, Richmond, Knightstown, and Cloverdale.

Illinois W. P. Flint (August 19): More reports of damage have been received this year than during the past season. Most of the reports come from west and southwest central Illinois. These insects have been on the increase in this part of the State for the last several years and are causing damage not only in towns, but also in the country.

Kentucky M. L. Didlake (August 27): Generally abundant, especially damaging evergreens.

Kansas J. W. McColloch (August): During the past month many reports of cedars being seriously injured have been received from Columbus, Wabaunsee, Princeton, Ottawa, and Redfield.

FALL WEBWORM (Hyphantria cunea Drury)

Massachusetts A. I. Bourne (August 23): We are finding at the present time, very generally over the State, that the fall webworm is decidedly more abundant and conspicuous than it has been for several years.

Connecticut M. P. Zappe (August 24): Very abundant along roadsides in the western half of the State on hickory, ash, cherry, etc.

New York Weekly News Letter, N. Y. State College of Agr., August 19: Common in Niagara County.

ssouri

L. Haseman (August 26): Has appeared in great numbers all over the State and has apparently shown a particular liking for the foliage of walnut, though it is attacking the fruit, forest, and shade trees generally.

BIRCH

YELLOW-NECKED CATERPILLAR (Datana ministra Drury)

braska

M. H. Swenk (July 15-August 1): A white birch tree on a lawn in Burt County was stripped during the last week in July.

CATALPA

CATALPA SPHINX (Ceratomia catalpae Boisd.)

diana

J. J. Davis (August 1): Caterpillars were observed defoliating trees more or less generally in the southern half of the State. (August 27): Observed as abundant at Romney, Richmond, and LaFayette during the month.

CATALPA MIDGE (Itonidia catalpae Comst.)

diana

J. J. Davis (August 27): The catalpa midge was abundant and destructive at Huntington as reported August 22.

ELM

SPINY ELM CATERPILLAR (Eu Vanessa antiope L.)

o

E. W. Mendenhall (August 15): The spiny elm caterpillar was found feeding on young elm in a nursery at Tippecanoe City.

EUROPEAN ELM SCALE (Gossyparia spuria Modcer)

sas

J. W. McColloch (July 26): A bad infestation was found at Goodland the latter part of July.

SWEET GUM

HICKORY HORNED DEVIL (Citheronia regalis Fab.)

diana

J. J. Davis (August 27): Sent in from Monmouth August 9 on sweet gum, from Aurora August 19, from Petersburg August 24 on maple, and from Greenfield August 24.

HICKORY

PHYLLOXERA (Phylloxera spp.)

Ohio E. W. Mendenhall (August 2): I found hickory leaf galls quite numerous in a locality near canal at Winchester.

JUNIPER

JUNIPER WEBWORM (Dichomeris marginellus Fab.)

Maryland P. D. Sanders (August 22): Reported from Elkton August 1.

LINDEN AND MAPLE

LINDEN LACEBUG (Gargaphia tiliae Walsh)

Kentucky J. J. Davis (August 27): The linden lacebug was observed very abundant and destructive to lindens at Louisville the last of July.

COTTONY MAPLE SCALE (Pulvinaria vitis L.)

Ohio E. W. Mendenhall (August 2): The cottony maple scale has broken out several times on lindens and maples at Columbus.

PINE

SOUTHERN PINE BEETLE (Dendroctonus frontalis Zimm.)

North Carolina R. A. St. George (August 5): This insect attacked second-growth shortleaf pines near the Bent Creek laboratory of the Pisgah National Forest, the first week of July. Trees from 2½ to 15 inches thick and from 20 to 40 feet high were attacked. This infestation seems to show correlation between abundance of beetles and weather conditions. A heavy brood overwintered and a big spring emergence was anticipated, but excess of rainfall from February to May caused heavy mortality by drowning the beetles in the galleries. During June and early July the rainfall was reduced to normal followed by a deficiency in late July, which possibly caused the above attack. Dying pines have been reported in several States in the southeastern and southern sections during July. Hymenopterous parasites have been very abundant ovipositing in the beetle larvae and this will result in their death when the parasite-larvae mature.

SAP BEETLES (Ips spp.)

Washington, D.C. W. Middleton (August 2): I. calligraphus Germ. and I.

grandicollis Eich. are killing pines around Washington more frequently than normally.

WHITE-PINE WEEVIL (Pissodes strobi Peck)

Connecticut

R. B. Friend (August): Injury appears unusually abundant throughout the State this year.

PINE BUTTERFLY (Neophasia menapia Feld.)

Idaho

C. Wakeland (August 20): Adults of the pine butterfly are quite abundant over large areas of the Payette National Forest and in that general district, indicating that they may reach the epidemic stage in another year or two.

NANTUCKET PINE MOTH (Rhyacionia frustrana Comst.)

Mississippi

R. W. Harned (August 22): A correspondent at Lyons sent specimens to us on August 14 with the information that these insects were seriously injuring pine trees on his property.

Nebraska

M. H. Swenk (July 15-August 1): A pine planting in Kimball County was found shortly after the middle of July to be infested with R. frustrana bushnelli.

SPRUCE

SPRUCE BUDWORM (Harmoloba fumiferana Clem.)

Minnesota

A. D. Aldrich (August 17): Moderately abundant, many spruce having been killed at Carlton.

SYCAMORE

SYCAMORE LACEBUG (Corythucha ciliata Say)

Mississippi

R. W. Harned (August 22): Specimens were found on sycamore at Picayune on July 24. The infestation was light.

TULIP

TULIP TREE SCALE (Toumeyella liriiodendri Gmel.)

Maryland

P. D. Sanders (August 22): Reported from Hagerstown August 16 and from Annapolis August 10.

Indiana

J. J. Davis (August 1): Abundant on tulip or yellow poplar at Elberfeld and Henryville.

WALNUT

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Pennsylvania T. L. Guyton (August 21): On an automobile trip from Harrisburg to Philadelphia, severe outbreaks were noticed practically all the way through. One may safely report this from Dauphin, Lebanon, Berks, and Montgomery Counties. In many instances the walnut trees were stripped.

Washington, D.C. W. Middleton (August 2): Seems to be more abundant than usual around Washington.

Indiana J. J. Davis (August 1): Abundant at Bloomfield and LaFayette.

I N S E C T S A T T A C K I N G G R E E N H O U S E

A N D O R N A M E N T A L P L A N T S

P E D S P I D E R (Tetranychus telarius L.)

Indiana J. J. Davis (August 27): Abundant on ornamentals, especially cedar, at Scottsburg and Evansville, early in August.

Ohio E. W. Mendenhall (August 2): Found some raspberry plantations in Fairfield County infested. Some damage was being done. (August 5): Many of the shade and fruit trees in Springfield are affected, such as maple, willow, oak, and apple.

Illinois W. P. Flint (August 19): Many reports are received daily concerning damage by various mites to foliage of flowering plants and shade trees, particularly evergreens.

Kentucky M. L. Didlake (August 27): Seems to be as abundant and harmful on hydrangeas, weigels, and morning-glory during periods of heavy rains as during drought at Lexington.

Kansas J. W. McColloch (August 14): Reported as very abundant on elms at Hill City.

Mississippi R. W. Harned (August 22): Serious injury to crepe myrtle was reported from Moss Point on August 17.

W H I T E G R U B S (Phyllophaga spp.)

New Hampshire P. R. Lowry (August): White grubs are severely infesting a very large new rose greenhouse at Dover, where many bushes have been killed. The larvae were brought in with the soil.

BLISTER BEETLES (Meloidae)

Ohio

E. W. Mendenhall (July 31): Blister beetles, both the black, Epicauta pennsylvanica DeG. and the gray, E. cinerea Forst., are doing considerable damage to aster and gladiolus flowers in Fairfield County.

Nebraska

M. H. Swenk (July 15-August 1): Numerous reports of injury by blister beetles came in during this period from over most of southeastern Nebraska, mostly Epicauta cinerea Forst. and Macrobasis immaculata Say.

MEALY FLATA (Ormenis pruinosa Say)

Massachusetts

A. P. Morse (August 2): There is a great abundance of lightning lantern flies on various cultivated shrubs, notably Aralia pentaphylla, red osier dogwood, Boston ivy, woodbine, etc., near Salem. No noticeable injury yet, but annoyance to householders.

ASTER

CHRYSANTHEMUM LACEBUG (Corythucha marmorata Uhl.)

New Hampshire

P. R. Lowry (August): Seriously injuring New England asters in a garden at Durham.

CANNA

LESSER CANNA LEAF ROLLER (Geshna cannalis Quaint.)

Mississippi

R. W. Harned (August 22): Serious injury to cannas has been reported from many sections of the State recently.

CHRYSANTHEMUM

GREENHOUSE CENTIPEDE (Scutigera immaculata Newp.)

Michigan

R. H. Pettit (July 29): The greenhouse centipede has arrived in Michigan and has done serious damage in one greenhouse at Mt. Clemens to a crop of chrysanthemums.

COLUMBINE

COLUMBINE BORER (Papaipema purpurifascia G. & R.)

New Hampshire

P. R. Lowry (August): A number of columbine plants in a flower garden have been injured.

CREPE MYRTLE

CREPE MYRTLE APHID (Myzocallis kahawaluokalani Kirkaldy)

Mississippi

R. W. Harned (August 22): Aphids identified by Mr. A. L. Hamner as this species, were found infesting crepe myrtle at Columbia, Pascagoula, Meridian, and Port Gibson recently.

IRIS

IRIS BORER (Macronoctua onusta Grote)

Kentucky

M. L. Didlake (August 27): The iris borer has been found injuring iris at Lexington, Louisville, and Mayfield.

LARKSPUR

CYCLAMEN MITE (Tarsonemus pallidus Banks)

Indiana

J. J. Davis (August 27): Reported as very destructive to larkspur at Franklin on August 1.

LILAC

LILAC BORER (Podosesia syringae Harr.)

Indiana

J. J. Davis (August 27): Reported damaging lilac at Crown Point and Evansville early in August.

VIOLETS

VIOLET SAWFLY (Emphytus canadensis Kby.)

Washington

R. F. Kern (August 17): Practically every plant in one planting of about 25 violet plants at Olympia was infested. The only other record I have of these in western Washington is one case in Aberdeen in 1928 and 1929, although no systematic search has been made.

I N S E C T S A T T A C K I N G M A N A N D
D O M E S T I C A N I M A L S

MAN

MOSQUITOES (*Culicidae*)

Missouri L. Haseman (August 26): Mosquitoes have been unusually annoying in spite of the drought in central Missouri since the middle of August near ponds, streams, and springs.

CHIGGER (*Trombicula irritans* Riley)

Missouri L. Haseman (August 26): During the month, probably owing to heat and lack of moisture, the chigger problem has largely cleared up.

FLEAS (*Ctenocephalus* spp.)

Connecticut B. H. Walden (August): More abundant in New Haven and Hartford Counties than last year on cats, dogs, and people.

Illinois W. P. Flint (August 19): Many reports of fleas are being received. Several communities in the central part of the State have reported practically every farm infested.

Nebraska M. H. Swenk (July 15-August 1): Cases of infestation of houses with the dog flea were reported during the last of July from all over southeastern Nebraska.

CATTLE

HORN FLY (*Haematobia irritans* L.)

Missouri L. Haseman (August 26): Horn flies continue to be very troublesome but less so during August.

STABLE FLY (*Stomoxys calcitrans* L.)

Missouri L. Haseman (August 26): Very troublesome, but they have been less so during August.

Nebraska M. H. Swenk (July 15-August 1): The biting stable fly continued to be the subject of inquiry because of its severe annoyance to livestock during the period here covered.

HORSE

HORSE FLIES (Tabanidae)

Missouri

L. Haseman (August 26): Horse flies, the common brown species and greenheads, have rapidly disappeared, but the large black species is still abundant.

SHEEP

SHEEP BOTFLY (Oestrus ovis L.)

Arizona

O. L. Barnes (August 16): Heavy infestations of the sheep botfly in a flock of sheep at Buckeye. The sheep had been shipped from Ashfork earlier in the summer. Of about 9,000 sheep in the flock, 1,200 died from some cause. The heads of 8 dead animals were examined and bots were found in each, averaging 6 bots to the head. Many bots were taken from living animals, according to the foreman in charge of the ranch. He did not see the animals, but specimens of the larvae of the parasite were brought to the office for identification.

HOUSEHOLD AND STORED -

PRODUCTS INSECTS

TERMITES (Reticulitermes spp.)

Kansas

J.W. McColloch (August 22): Injury reported August 6 from several places at Wichita and damage to woodwork in a house at Kiowa reported August 10, and it was reported on August 20 that a granary had been ruined at Cawker City.

Idaho

C. Wakeland (August 20): Two widely separated instances of severe termite injury have come to our attention during the month. In one instance timbers under large buildings are being ~~destroyed~~ and in another timbers in a granary have been so weakened that the owner can not use the granary to capacity for the year's crop.

ARGENTINE ANT (Iridomyrmex humilis Mayr)

Mississippi

R. W. Harned (August 28): New infestations have been found in the following places: Zama, Hatley, Nettleton, Quincy, Byram, $4\frac{1}{2}$ miles northeast of Aberdeen, 2 miles north of Amory, 5 miles north of Aberdeen, 4 miles northwest of Jackson.

ANGOUMOIS GRAIN MOTH (Sitotroga cerealella Oliv.)

Virginia

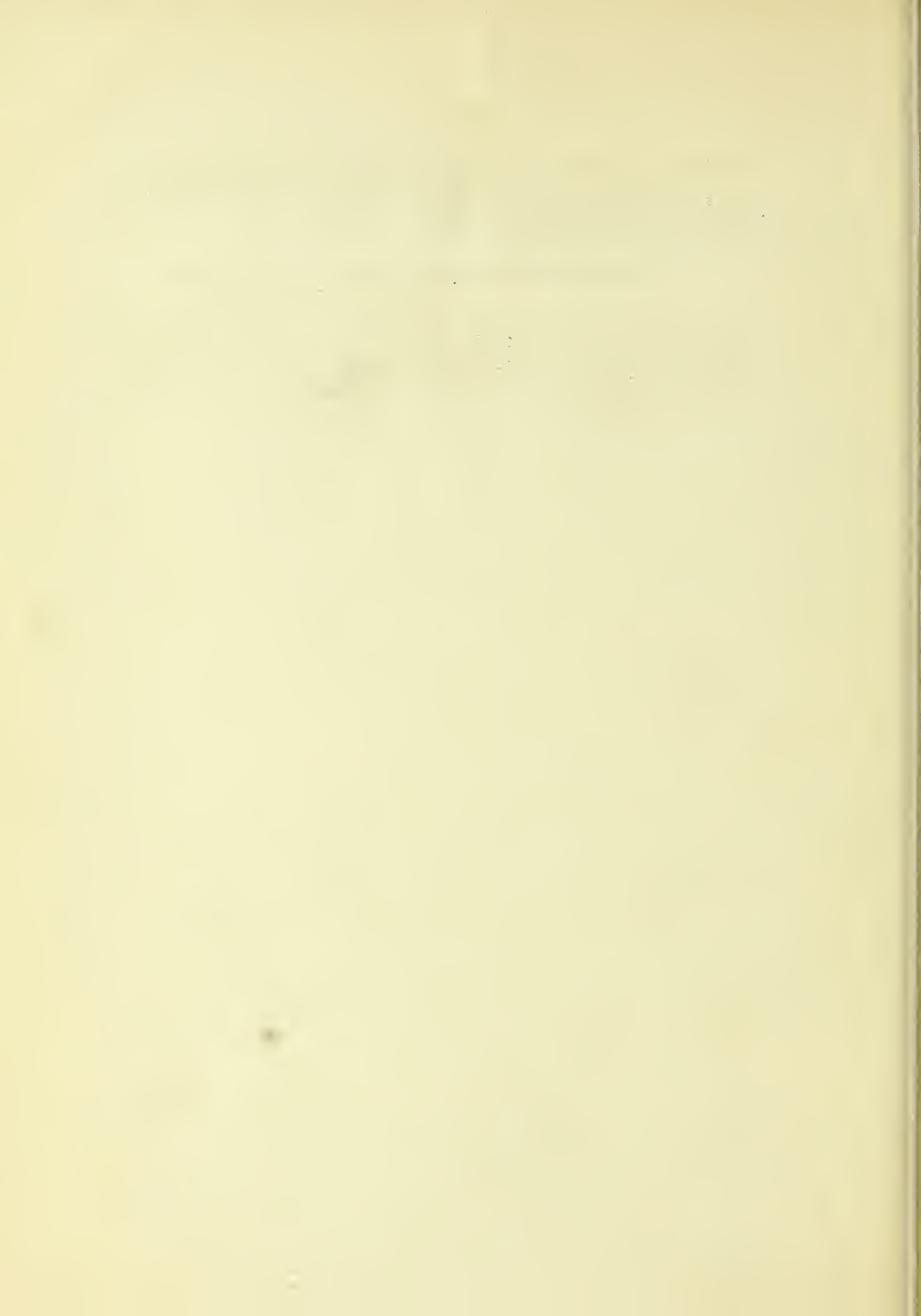
W. A. Sherman (August 27): This insect is very much more

abundant than usual throughout this part of the country. I have a field of about 20 acres at McLean and found this insect in it between harvest and threshing. The moths are seen flying about the barns.

CIGARETTE BEETLE (Lasioderma serricorne Fab.)

Iowa

C. J. Drake (August 29): This beetle is quite common in the State and widely distributed. Most reports of injury are limited to attacks on overstuffed furniture, and in many cases the stuffing has been totally destroyed by this pest.



THE INSECT PEST SURVEY
BULLETIN

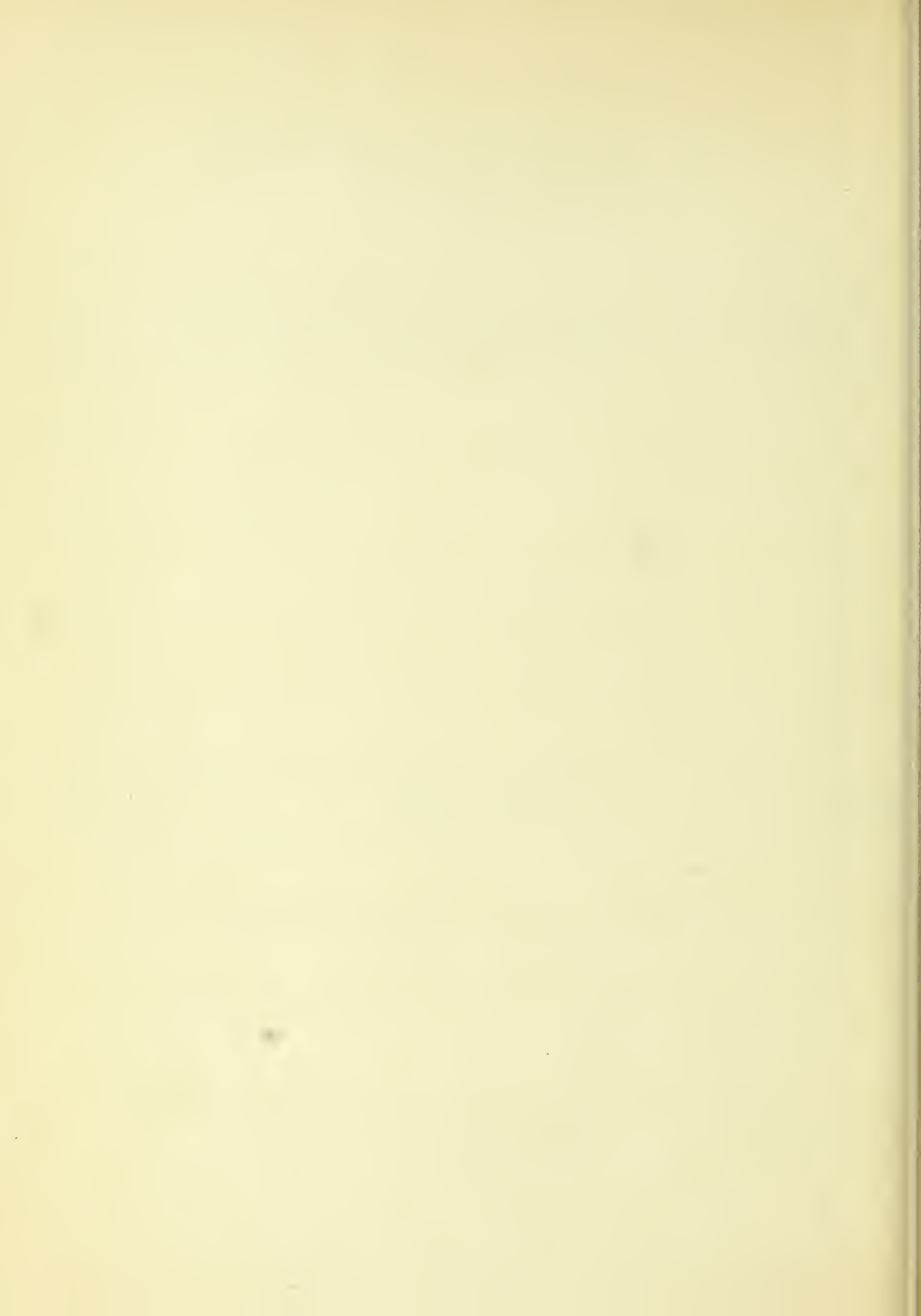
A periodical review of entomological conditions throughout the United States
issued on the first of each month from March to December, inclusive.

Volume 9

October 1, 1929

Number 8

BUREAU OF ENTOMOLOGY
UNITED STATES
DEPARTMENT OF AGRICULTURE
AND
THE STATE ENTOMOLOGICAL
AGENCIES COOPERATING



INSECT PEST SURVEY BULLETIN

Vol. 9

October 1, 1929

No. 8

OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR SEPTEMBER, 1929

No findings of the Mediterranean fruit fly have been reported during the month of September.

The rather serious conditions with regard to grasshoppers reported in the last number of the Bulletin have developed into serious outbreaks in the Great Plains district of North Dakota and Montana.

Serious depredations by wireworms continued to be reported from scattered localities over the entire country, the damage being particularly serious on the Pacific Coast.

The very light Hessian fly infestation reported from New York State last month apparently extends westward through Ohio. The detailed summary of the Illinois survey, on the other hand, shows a very marked increase in infestation, the average of infested strows for the State being about 15 per cent. Hessian fly seems to be on the increase also in Missouri.

Very serious depredations by corn root worms have been reported from Iowa and Nebraska. Large patches of corn are completely killed out in many districts and much corn which was not killed was lodged on account of the destruction of the roots.

The velvet bean caterpillar is practically ruining the soy bean crop in southern Louisiana and along the eastern coast of Texas. The strange feature of this outbreak is the fact that velvet beans and cowpeas adjacent to ruined fields of soy beans are practically undamaged.

Cowpeas in the coastal plains district of the Carolinas are so seriously infested by the cowpea curculio that many growers are not recovering their seed.

During August the alfalfa weevil was discovered in the vicinity of Medford, Oregon. This appears to be a commercial jump as the nearest known infestation is 200 miles distant in eastern Oregon. This insect was also found for the first time in Alpine County, California, this being an extension of the Carson Valley, Nev., area.

Owing to a partial third brood of the codling moth developing in the Middle Atlantic, East Central, and West Central States, late injury by the worms is very noticeable, even in well sprayed orchards. Serious conditions have also been reported from Nevada and Washington.

More damage by the apple maggot than usual is being observed in the New England States.

The apple fruit worm (Argyresthis conjugolla Zell.) has been observed for the first time in the Montesano section of Washington.

A very interesting case of the complete control of an insect pest by its natural enemies is reported from Ohio, where the apple flea weevil has been practically eliminated this year by its hymenopterous parasites.

The oriental fruit moth is recorded for the first time from the northern end of Indiana and also from Amherst, Mass., and is quite generally reported from practically the entire infested region.

The grape berry moth has very materially increased in abundance in the Lake Shore district of Ohio and over practically the entire State of West Virginia.

The fall webworm is unusually abundant throughout the South Atlantic and Gulf Coast region extending up the Mississippi Valley into Missouri.

The European weevil, Brachyrhinus cribricollis Gyll., has been discovered on citrus and privet in Los Angeles County, California.

The citrus whitefly is being reported as very abundant from Florida and the Gulf Coast section.

Very serious damage by the garden webworm to alfalfa is reported from Iowa and Nebraska.

The curculionid beetle, Tylosderma morbillosa Lec., is recorded for the first time as a strawberry pest in Washington.

The pickle worm appears to be much more serious than usual in the Northern part of its range, reports coming from the East Central and the West Central States. The insect is recorded for the first time from Nebraska.

Two heretofore unrecorded species of springtails are doing commercial damage to mushrooms in Minnesota and Missouri. The species in Minnesota belongs to the genus Achoreutes and the species in Missouri to the genus Schottella.

tent

A very interesting account of an outbreak of the great basin/caterpillar appears in this number of the Bulletin. The outbreak took place near Mount Shasta, California, and the worms were so numerous that they prevented railroad trains from making the grades. Special equipment was required on the locomotives to meet the emergency.

The satin moth has been recorded for the first time in woodland districts in New England.

The hemlock spanworm has killed practically all of the hemlock in the resort region of Michigan and is now seriously damaging hardwood.

A very heavy infestation by the two-lined prominent (Hemerocampa bilineata Pack.) attacking beech and oak is reported from Michigan.

A considerable part of the White Mountain district of New Hampshire, a large part of Vermont and Maine, and parts of Massachusetts seem to be well infested by the birch leaf-mining sawfly.

OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR SEPTEMBER, 1929

The general application of control measures against the European corn borer has had very favorable results in Ontario. In spite of this, observations indicate that in Kent and Essex counties sweet corn was more heavily infested than last year, although in the case of field corn the increase was only slight. The presence of this insect in Quebec has not yet caused serious crop injury. In New Brunswick, in Sunbury and Queens Counties, the infestation is extremely light. As a result of scouting, the borer has been found in Nova Scotia, in Yarmouth, Digby, and Annapolis counties.

The grasshopper infestation in British Columbia, while not extremely severe as in 1926, again shows a tendency to increase. The exceedingly dry summer enabled the grasshoppers to lay their eggs successfully. Moderate outbreaks of grasshoppers also are reported from southern Quebec and southeastern Prince Edward Island.

Severe injury by white grubs to a variety of field and garden crops is anticipated over a fairly wide area in southern Quebec, in late fall, and during the spring of 1930.

Weather conditions have been favorable to the development and increase of the wheat-stem sawfly in southern Manitoba, but loss to wheat and rye does not exceed a few thousand dollars for the whole province. Damage to wheat by this species, in Saskatchewan, is believed to be moderately severe generally throughout the infested areas. Although the infestation is not so great as in former years the rate of damage appears to be unusually high.

Heavy infestations of the turnip aphid are reported from districts of southern New Brunswick and locally in southern Ontario. The pea aphid has been reported in great numbers north of Lake Ontario in the counties of Prince Edward, Northumberland, and Durham, and also in southern Quebec.

There is a heavy infestation of the imported cabbage worm in southern Manitoba, resulting in the probable destruction of half the cabbage crop in farm gardens. The infestation covers all districts of Manitoba south of the main line of the Canadian Pacific Railway, becoming less northward, but being present at Swan river, north of latitude 52°.

During the summer the tarnished plant bug occurred in very injurious numbers in southern Ontario, causing considerable damage to garden plants and nursery stock. Particularly severe injury was caused to the celery crop.

In districts of southern Saskatchewan, the bertha armyworm, Barathra configurata Wlk., caused considerable damage to cabbage and flax and some injury to corn and other crops. The infestation apparently is not so extensive nor the damage so severe as in 1928, but this species is probably the most severe pest of cabbage this season in the area involved.

An outbreak of the zebra caterpillar has been reported from districts of southern New Brunswick, southern Quebec, and Ontario, affecting cruciferous plants and a variety of other flowering plants and vegetable crops.

The European red mite has been very conspicuous in the Niagara district, Ontario, particularly in plum orchards, and also along the St. John River Valley, New Brunswick, in apple orchards. An outbreak of the red spider, Tetranychus telarius L., occurred in all parts of Manitoba, south of latitude 52°, affecting raspberry, currant, bean, pea and many other plants.

In addition to the heavy outbreak of the green apple aphid in southern Ontario already reported, a large percentage of the apple orchards in the province suffered injury from the rosy aphid, Amuraphis rosaeus Balter.

A heavy outbreak of the apple maggot in many parts of Ontario, east of Toronto, was prevented by spraying. There has been a greater menace from this species in Ontario during the last four years than in any previous period in the past twenty years.

GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

Florida J. R. Watson (September 23): Grasshoppers are doing considerable damage to citrus over Florida.

South Dakota W. C. Severin (August 30): The outstanding outbreak in South Dakota at the present time is an outbreak of grasshoppers. Melanoplus femur-rubrum DeG., M. differentialis Thos., M. civittatus Say, and M. atlantis Riley are very abundant in Lyman, Jones, Jackson, Pennington, Meade, Stanley, Hughes, Haakon, Buffalo, Brule, and Gregory Counties, attacking alfalfa chiefly.

Nebraska M. H. Swenk (September 3): During the first half of August grasshoppers continued to be numerous and injurious in vegetable and flower gardens in the vicinity of Lincoln and around parts of Omaha, Fremont, Columbus, Kearney, and elsewhere in the Platte Valley. Some damage to alfalfa was reported from Thayer County late in August. Injury was serious in some alfalfa fields in southwestern Nebraska from Banner and Deuel Counties to Chase and Hayes Counties. Some apprehension is felt by farmers in this area that the grasshoppers may do severe damage to the winter wheat planted this fall, as the insects are more numerous than usual at this time.

T. S. Greene, jr., and L. G. Bankhofer (September 2): Upon examination of yellow pine at the western edge of the plantations, a replant on the 1927 burn, we found most of the trees dead. The heavy loss appeared to be the work of grasshoppers. Many of the trees had almost the entire stem girdled, others had their stems chewed off above the ground, and still others had most of the foliage destroyed as well as being partially girdled. A count of several rows showed a loss of about 86 per cent out of 1,200 trees examined while some of the remaining trees were partially injured in the part of the plantation examined. Damage to this year's planting on another area appeared to be much lighter, probably about one-third of the above. This is the most severe damage of this type noted thus far since field work began at Halsey. A few grasshoppers caged with small seedlings have caused similar damage to these trees. Most of the destruction probably occurred in July as there was no damage when the plantation was examined in June and there is little fresh work now. Trees planted in the last two or three years are most susceptible and yellow pine is damaged most severely.

Missouri K. C. Sullivan (September 23): Grasshoppers are very abundant. The species include Melanoplus femur-rubrum DeG., M. differentialis Thos., Conocephalus sp., and Archia pseudo-nictana Thom.

Colorado

C. P. Gillette (September 21): Grasshoppers are moderately abundant in northeastern Colorado, many calls for grasshopper poisoning having been received.

Montana

T. B. Mabee (September 21): Grasshoppers, Melanoplus mexicanus bivittatus Say et al., have increased their populations over the entire eastern half of the State and are very abundant in Roosevelt, McCone, Richland, Dawson, and parts of Toole, Liberty, Cascade, Fergus, Hill, and Cascade Counties, and in one place only, Lake County, west of the Divide.

California

Monthly News Letter, Los Angeles County Agricultural Comm., Vol. 11, No. 9, August 13: Continued periodic inspections of what have been grasshopper breeding grounds in the Antelope Valley during previous years indicate that owing to the almost entire absence of "hoppers" in those localities there will not be any necessity for control operations this season.

Washington

Wm. W. Baker (August 29): A report was received that grasshoppers were thick in one of the tall office buildings in Tacoma. That appeared to be this species (Melanoplus atlantis Riley) was found in fairly large numbers clinging to the walls and on the sidewalks. These had likely bred in the cutover region west of Tacoma.

IRENEIDS (Heteridae)

South Carolina

H. H. Brunson (September 24): Horistenotus uhlerii Horn has been very destructive this season in Hampton and surrounding counties.

Iowa

C. J. Drake (August 29): Melanotus sp. has been doing considerable damage to corn in eastern and southeastern Iowa. The growers of Davis County estimate the damage to average over \$200 per farm or over \$400,000 for the county.

Alabama

C. T. Beem and L. L. Odum (August 30): On August 30 some soil sifting for Heteroderes laurentii Guér. was conducted near Foley. A series of soil plots 12 in. square and 4 in. deep were sifted. The populations of larvae were found to range from none in some of the plots where Irish potatoes had been grown as the spring crop and followed by late corn, up to 9 larvae per square foot in turnips. Old corn and heavily trampled hedge rows showed an average of 3 larvae per square foot. It would seem that adults gradually moved over to pollen-bearing plants such as corn and the various common native grasses. Larvae of all sizes from the very smallest to the full-grown ones were found. However, the greater number were approximately the same size, indicating a peak of hatching. Larvae of this species attain almost full size in two or two and one-half months.

- axes
T. L. Thomas (September 24): Very abundant on wheat in certain districts of the peninsula.
- (August):
- oming
H. L. Sweetman/ Moderately abundant at Evanston.
- alifornia
S. Lockwood (August 23): Wireworms of an undetermined species destroyed the first planting of tomatoes near Sacramento during May. On the 13th of this month 94 per cent of the plants were injured in a field of 140 acres. A later planting did not receive much attention from these insects. On July 15 Messrs. Coe and Wright, of the San Joaquin Agricultural Commission, and this reporter found a field of green beans which were attacked by wireworms to a degree that no plants were found free from the borings.
- ashington
Wm. M. Baker (September 18): A field of potatoes in Puyallup was visited in which practically every hill had at least one infested tuber and some had three and four tubers injured. Three species of wireworms were taken out of the hills, but only one was actually found in the potato. These have been sent to M. C. Lane for determination. Some of the injury had been caused early enough to have all healed over though most of it was recent and much more extensive than the early damage, many potatoes being nearly destroyed. (September 19): A patch of about one-half acre of iris in Puyallup in light, sandy soil has been attacked. About 75 per cent of the sizes known as large rounds and slabs and about 15 per cent of the size known as pea size were injured. The feeding punctures are not particularly deep, being from 2 to 10 mm. in depth.
- WHITE GRUBS (Phyllophaga spp.)
- onnecticut
A. B. Friend (September 18): Larvae of P. fusca Froel. have killed grass in yards and lawns at Glastonbury.
- aho
J. S. Houser (September 24): White grubs are very abundant. Heavy flight in May.
- Indiana
C. J. Davis (September 23): White grubs damaged a hedge at Attica as reported on September 19.
- Illinois
J. F. Flint (September 19): The 1929 brood is very abundant in central and northern Illinois.
- Wisconsin
H. L. Chambers (September 13): Scarce; one serious infestation was reported in a nursery at Hartland.
- BREIT. ARMY WEE (Agrotis configurata Walk.)
- Montana
T. D. Mabey (September 21): Moderately abundant in the Bitter Root Valley and in a few isolated spots east of the Divide inuster and Bonanza Counties.

VARIEGATED CUTWORM (Lycophotia margaritosa saucia Hbn.)

Arizona

C. L. Barnes (August 25): Very abundant and caused severe injury to alfalfa, corn, potato, tomato, wheat, and cabbage in Navajo and Apache Counties. It also attacked beet, carrot, grape, various grasses and weeds, and ornamental plants. The worms in almost every case had assumed the armyworm habit and several areas of alfalfa were completely eaten. Almost all cabbage observed was ruined. The worms were reported by the county agents to be much more abundant this year than normally

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli Guen.)

Arizona

C. L. Barnes (September 23): Severe injury to young lettuce in one 40-acre and two 20-acre plantings west of Phoenix has been observed.

CEREAL AND FORAGE - CROP INSECTS

WHEAT AND OATS

MESSIAN FLY (Phytophaga destructor Say)

Ohio

T. H. Parks and J. S. Houser (September 24): Scarce; fewer than for 10 years. Some found in Butler County.

Illinois

W. P. Flint (September 19): The annual wheat survey made by the entomologists of the Natural History Survey and Federal Bureau of Entomology cooperating has just been completed. The survey this year shows a very marked increase in the Hessian fly in the central and southern counties. There is also an increase in northern Illinois, but it is not so great and the infestation in this section is not so heavy as in the central and southern counties. The infestation runs generally from 8 to 33 per cent and will average around 11.5 per cent. The group of eastern counties showing heaviest infestation last year has about the same infestation this year. This includes Edgar, Clark, and Crawford Counties. The following table shows the percentages of infestation covered by the survey:

County		County	
Adams	9.3	Clinton	15.6
Brown	20.0	Coles	6.2
Bureau	6.0	Crawford	41.0
Cass	13.5	DeKalb	2.3
Champaign	2.4	Douglas	3.2
Christian	19.3	Edgar	16.0
Clark	31.0	Ford	.8

Fulton	16.7	Montgomery	22.0
Gallatin	8.0	Morgan	10.0
Greene	33.7	Moultrie	20.0
Grundy	1.5	Ogle	2.5
Hancock	9.7	Piatt	8.6
Henry	2.2	Randolph	12.0
Iroquois	3.0	Rock Island	2.0
Jackson	5.7	Sangamon	12.7
Jersey	18.3	Schuyler	31.0
Kankakee	.5	Scott	14.0
LaSalle	1.0	Shelby	2.6
Lee	.7	St. Clair	10.0
Livingston	.6	Tazewell	13.4
McDonough	15.0	Vermilion	9.0
McLean	6.0	Whiteside	1.6
Macoupin	22.2	Will	.4
Madison	22.5	Williamson	11.0
Mason	13.2	Woodford	7.4
Menard	24.0		

Missouri L. Haseman (September 23): Moderately abundant, campaign of control under way.

K. C. Sullivan (September 23): Scarce, but on the increase.

WHEAT JOINT WORM (Harmolita tritici Fitch)

Illinois W. P. Flint (September 19): The annual wheat survey showed the lightest infestation that has occurred any time for the last 10 years, Whiteside and Gallatin Counties being the only ones in the State with an appreciable infestation.

WHEAT STEM SAWFLY (Cephus cinctus Nort.)

North Dakota J. A. Munro (September 23): A sample of Marquis wheat showing wheat stem sawfly injury was received from Goodrich, Sheridan County, on September 17.

ARMYWORM (Cirphis unibuncta Haw.)

Iowa C. J. Drake (August 29): The armyworm occurred in considerable numbers in the counties of Emmet, Kossuth, Humboldt, Ida, Lyon, Monona, O'Brien, Winnebago, and Woodbury. A considerable amount of damage was done to oats and to a much less extent to corn. In several instances farmers reported that fields containing 30 acres of oats had been totally destroyed before they were aware of their presence.

CORN

CORN EAR WORM (Heliothis obsoleta Fab.)

- Connecticut W. E. Britton (September 24): This insect seems to be more abundant than usual on corn in New Haven, Woodbridge, and Plainville.
- Wisconsin E. L. Chambers (September 1): Sweet corn and pop corn are being injured to some extent in Racine, Milwaukee, Kenosha, and Walworth Counties, according to inquiries received for its control and specimens submitted.
- Iowa C. N. Ainslie (August 28): Field corn in the district of Sioux City seems unusually free from this pest this season. Early sweet corn was badly injured.

FALL ARMYWORM (Laphygma frugiperda S. & A.)

- Florida J. R. Watson (September 23): The fall armyworm has been more or less abundant in the western part of the State for some months and is beginning to make its appearance in certain isolated regions in the peninsular part of the State. The damage is chiefly to grass and sugar cane.
- Mississippi R. W. Harned (September 23): Injury to sugar cane at Watachez and to corn at Metcalf was reported on August 23.
- R. F. Colmer (September 20): We have had an infestation in Moss Point and Pascagoula. In some cases they have eaten the grass from entire lawns.

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

- Rhode Island A. B. Stone (September 25): Moderately abundant; spotty second brood abundant in some localities.
- Ohio T. H. Parks (September 23): Moderately abundant; increased in northwestern counties.

CORN ROOT WORMS (Diabrotica spp.)

- Iowa C. J. Drake (August 29): D. duodecimpunctata Fab. and D. longicornis Say are abundant over the entire State and here and there are causing a considerable amount of commercial damage. In several instances the roots were almost completely destroyed and after a heavy rain the corn fell to the ground. The western corn root worm seems to be the more abundant.
- Kansas R. L. Parker (August 29): The western corn root worm has been reported as cutting roots of corn at Lebanon.

Nebraska

M. H. Swenk (September 3): During the month of August there was much serious trouble with corn root worms in several sections of the State. The corn was killed out in large patches, and there were many fallen stalks in the affected fields. Two years ago (1927) there was similar trouble with this pest, but little or none last year. D. longicornis Say was especially troublesome in Valley, Sherman, and Buffalo Counties in the central part of the State, and also in Keya Paha County to the north and in Webster, Nuckolls, and Jefferson Counties along the southern boundary of the State. The Colorado/corn root worm (D. virgifera Lec.) was similarly troublesome in southwestern Nebraska (Hitchcock County).

FLOWER BEETLES (Euphoria spp.)

North Carolina

C. H. Brannon (September 4): Flower beetles of this genus are causing noticeable injury to corn in Caswell County.

SOY BEANS

VELVET BEAN CATERPILLAR (Anticarsia gemmatilis Hbn.)

Louisiana

W. E. Hinds (September 20): This insect is very abundant in the southern half of the State. It has appeared this year in greater abundance than ever before, stripping soy beans as completely as the cotton leaf worm does cotton. Outbreak appeared first in the vicinity of Jeanerette and stripping became general at Baton Rouge by the last of August. Another generation is in prospect. Poisoning has checked worm feeding promptly with some burning of foliage which has not been nearly so serious as the worm stripping. Where worm feeding was stopped by poisoning the buds were saved and started new growth promptly. Where worms were not poisoned and were abundant they frequently destroyed buds so completely that new foliage was not formed. The seed crop of several varieties of soy beans will be materially reduced in Louisiana. Natural control of these worms has been noticed especially through the feeding of birds, the attack of wasps, and attack of a white fungus, presumably Empusa rileyi, which is causing the death of large numbers of larvae.

T. E. Holloway (September 17): Messrs. J. W. Ingram and T. A. Douglas have found an infestation ranging from Napoleonville through southern Louisiana to the Texas line. The only crop attacked is soy beans, except cotton growing next to soy beans. Unless checked, the caterpillars defoliate the soy bean plants and then feed on the remaining stems, finally destroying all life. Curiously enough, neither velvet beans nor cowpeas, even when growing next to soy beans, is attacked.

J. W. Ingram (August 27): On August 27 a plantation was

visited in Assumption Parish where 100 acres of soy beans had been completely defoliated. All leaves and small twigs had been eaten, so the plants resembled sticks stuck up in the field. Only a very small number of worms were found, but 6 pupae were found after digging in 1 square foot of soil. The owner stated that the worms appeared so suddenly and ate so fast that his beans were destroyed before the worms were noticed; 50 acres of soy beans planted in stubble cane were only partially defoliated. According to the owner of this plantation, the worms appeared in destructive numbers in soy-bean fields throughout this parish and adjoining ones.

Texas

T. E. Holloway (September 17): A report from Beaumont states that this insect is now to be found near there.

COWPEAS

COWPEA CURCULIO (Chalcodermus aeneus Boh.)

North Carolina
and
South Carolina

W. A. Thomas (July 15): The cowpea pod weevil has been unusually destructive to cowpeas in practically all of the coastal section of the Carolinas. In the vicinity of Bennettsville, S. C., many growers claim that they are scarcely getting the seed they planted as a result of this insect's work. Single pods were observed to have more than 50 punctures for feeding and oviposition.

GRASS

CUTWORMS (Noctuidae)

Arizona

O. L. Barnes (September 18): Severe damage to golf greens of bent grass by cutworms near Phoenix has been observed. The damage ranged from about 15 to 100 per cent considering the greens individually. In some cases no grass at all was left. Feltia annexa Treit., Agrotis ypsilon Rott.?, Prodenia ornithogalli Guen., and an undetermined species were present. A. ypsilon was present in greatest numbers, followed closely by F. annexa, while the latter two species were relatively much less numerous. The golf course was desert land a year ago.

A SCALE INSECT (Aclerda obscura Parrott)

North Carolina

C. H. Brannon (September 2): This scale was collected in Moore County near Cameron on sandhill dominant grass (Aristida stricta). Dr. H. Morrison who identified the specimen furnished the following information: "Appears to be our first definite record since original publication of species. Compared with co-type."

ALFALFA

ALFALFA WEEVIL (Phytonomus posticus Gyll.)

evada G. G. Schreis (September 13): Adults are seeking hibernation quarters.

regon D. C. Mote (August): The alfalfa weevil was discovered in the vicinity of Medford early in July. This a commercial jump since the nearest known infestation is some 200 miles from Medford in eastern Oregon. Rockwood and Mote made a preliminary survey, determining the limits of the infestation at Central Point on the north, Phoenix on the south, about 2 miles west and two and one-half miles east of Medford. One peculiar feature of the infestation was the lateness of weevil development. The larvae were feeding and doing damage to the second crop of hay which was nearing maturity.

alifornia S. Lockwood (August 30): Mr. Geo. Wilson and the writer found the alfalfa weevil for the first time in Alpine County, the infestation being an extension of the area of the Carson Valley which has been infested for a longer period. This insect was also found to have extended its area by 1 mile within a year in Lassen County.

THREE-CORNERED ALFALFA HOPPER (Stictocophala festina Say)

izona O. L. Barnes (September 22): Moderately abundant in the Verde Valley in Yavapai County. Abundant in some fields near Phoenix.

GARDEN WEBWORM (Loxostege similalis Guen.)

owa C. J. Drake (August 29): Since my last report we have had a large number of complaints from a large district in the western portion of the State. It has been reported in Adair and Dallas Counties in addition to the counties I named in my previous letter. Many new fields of alfalfa were very seriously damaged or totally destroyed. Quite a number of growers reported that fields of 30 or 40 acres were entirely riddled.

braska M. H. Swenk (September 3): An outstanding insect pest of the month was the garden webworm, the injuries of which appeared in the alfalfa fields over an area enclosed by Douglas, Otoe, Fillmore, Adams, York, and Butler Counties, and also in Antelope County near Neligh and Brunswick about August 7 or 8 and did much damage during the following week or 10 days. Complaints of injury ceased abruptly immediately after the middle of August. Many fields were heavily infested and by the time the larvae were matured were so eaten and webbed that they appeared as if they had been frostbitten or swept

by fire. In Antelope County, Russian thistles and pigweed were much attacked along with the alfalfa. Where the second cutting had been made about the middle of July the damage was little or none, but in the affected area there was considerable damage in fields cut late in July.

CLOVER

CLOVER APHID (Anuraphis bakori Cowan)

Colorado

C. P. Gillette (September 21): The clover aphid was very abundant ^{and} did considerable damage to clover seed in the lower Arkansas Valley the past summer.

F R U I T I N S E C T S

APPLE

CODLING MOTH (Carpocapsa pomonella L.)

Virginia

W. J. Schoene (September 21): A partial third brood has appeared in northern and central Virginia this season. This brood increases the number of wormy apples even in sprayed orchards.

Ohio

T. H. Parks (September 23): This insect has increased over last year and "stings" of the late worms mark apples on some of the best sprayed orchards.

J. S. Houser (September 24): Moderately abundant throughout the State.

Indiana

J. J. Davis (September 23): Reported as very abundant at New Castle on September 13. It is more abundant and destructive this year than last throughout southern Indiana.

Illinois

W. P. Flint (September 19): Late worms are more abundant than usual.

Kentucky

W. A. Price (September 20): Moderately abundant on apple over western and northern Kentucky.

Missouri

L. Haseman (September 23): Late pin worms have shown up in unusual abundance in well sprayed orchards, though they are not so abundant as a year ago.

E. C. Sullivan (September 23): Very abundant.

Arkansas

D. Isely (September 20): Became very abundant during the latter part of August and early September owing to favorable

weather conditions. The infestations are probably heavier than at any time since 1926.

- Oklahoma O. E. Sanborn (August 31): Moderately abundant.
- Colorado C. P. Gillette (September 21): Very abundant, as usual, in all apple-growing sections.
- Nevada G. G. Schweis (September 18): Very abundant, about 90 per cent of the apples being damaged.
- Washington E. J. Newcomer (September 21): Owing to unseasonably warm weather during the first three weeks of September, the codling moth has remained more active than usual in eastern Washington, and much damage to apples from late worms is anticipated.

APPLE MAGGOT (Rhagoletis pomonella Walsh)

- Massachusetts A. I. Bourne (September 26): Up to early August there had been little indication of any serious abundance and an attack appeared to develop to its height in August and early September, which is much later than we have been accustomed to experience. For this reason many growers had neglected to apply the later spray with the result that some midseason varieties, such as Wealthy and, to some extent, McIntosh, have shown a considerable amount of infestation.
- Connecticut M. P. Zappe (September 28): Wormy apples are very common in the markets in New Haven. Considerable damage has been reported from Litchfield County. About 70 per cent of the crop appears to be damaged at Durham.
- Ohio T. H. Parks (September 23): The apple maggot is generally scarce in Ohio, but becoming more abundant in the northern part of the State.
- Arkansas P. H. Millar (September 23): Found in peach fruit in Hot Spring County.

APPLE FRUIT WORM (Argyresthia conjugella Zell.)

- Washington Wm. W. Baker (September 6): Four apples were sent in by I. H. Hawley of Montesano. These were all infested and three quite seriously; the fourth was still green and had only a small amount of damage. At this time none of the larvae were over 7 mm. in length and some were only 4 mm. Mr. Hawley states that this is the first year that growers in that district have noticed injury of this type.

LEAFHOPPERS (Cicadellidae)

- Virginia W. J. Schoene (September 21): Typhlocyba pomaria McAtee

is present in considerable numbers in some apple orchards. The foliage has been injured to the point that the leaves have a grayish appearance.

Ohio J. S. Houser (September 24): Apple leafhoppers are moderately abundant.

T. H. Parks (September 18): Bad in one large orchard in Lucas County, where 12 sprays were applied during the season. More abundant in southern Ohio than last year.

Arkansas D. Isely (September 20): Erythroneura obliqua Say is very abundant in northwestern Arkansas.

APPLE FLEA WEEVIL (Orchestes pallicornis Say)

Ohio J. S. Houser (September 24): One of the outstanding insect developments in Ohio this season has been the almost complete elimination of the apple flea weevil by hymenopterous parasites. Up until this year the rate of increase by this insect from season to season was quite disturbing, but in June hymenopterous parasites working in larvae and pupae almost completely eradicated the brood so that late in the summer the insect was scarcely to be encountered.

APPLE CURCULIO (Tachypterellus quadrigibbus Say)

Arkansas P. H. Millar (September 23): Found in apple in Pulaski County.

GIANT ROOT BORER (Prionus laticollis Drury)

Arkansas S. A. Summerland (September 25): Considerable damage is being done in one orchard near Springdale. The root system of young apple and cherry trees is being destroyed and the trees blow over.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

West Virginia L. M. Peairs (September 19): Very abundant at Martinsburg.

Georgia M. S. Yoomans (September): Moderately abundant and increasing at Cornelia. Crawlers are being observed.

Ohio J. S. Houser (September 24): Generally scarce, but increasing in some parts of north-central Ohio.

Missouri L. Haseman (September 23): This insect has been breeding heavily this summer at Columbia.

Mississippi R. W. Harned and assistants (September): Very abundant in Calhoun, Chickasaw, Holmes, George, Greene, and Perry Counties.

PEACH

PEACH BORER (Aegeria exitiosa Say)

- Georgia M. S. Yeomans (September): Moderately abundant; adults are emerging and laying eggs at Cornelia.
- Illinois S. C. Chandler (September 14): Heaviest emergence recorded is taking place in southern Illinois.
- Kentucky W. A. Price (September 20): Moderately abundant on peach over the State.
- Mississippi H. E. Carpenter (September 19): Very abundant in Calhoun and Chickasaw Counties.

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

- Massachusetts A. I. Bourne (September 26): We have found the oriental fruit moth in peaches at Amherst for the first time. In one orchard it is abundant enough to be causing serious loss. We have also found it in various points in Hampden County, but there were only a few larvae which indicate just the beginning of an infestation and did not represent any commercial loss.
- Ohio E. H. Parks (September 23): Very heavy increase in the northern part of the State.
- J. S. Houser (September 24): Very abundant wherever peaches are grown.
- Indiana J. J. Davis (September 23): Received from Goshen on September 11, which is our first record for the northern end of the State. This insect is now appearing generally throughout the State.
- Illinois S. C. Chandler (September 14): There has been quite a strong emergence from larvae that pupated the first of September. Very little pupation is taking place at the present time. Infestation in late peaches is much greater in parts of southern Illinois other than the section which had the original infestation, where it is about the same as in 1928.
- Kentucky W. A. Price (September 11): Very prevalent over the entire State and doing very serious damage to the peach crop.
- Arkansas P. H. Millar (September 23): There is considerable more injury to peaches in the towns than in commercial orchards. The insect was found in the following counties: Phillips, Lee, St. Francis, Cross, Greene, and Pularhi.

Mississippi R. W. Harned (September 23): Peach twigs that have evidently been injured by the larvae have been received from Lafayette, Holmes, Leflore, Copiah, Adams, Coahoma, Pike, Pontotoc, and Warren Counties.

PEACH AND PLUM SLUG (Eriocampoides amygdalina Roh.)

Arkansas P. H. Millar (September 23): Found attacking peach foliage in Phillips and Mississippi Counties.

WHITE PEACH SCALE (Aulacaspis pentagona Targ.)

South Carolina M. H. Brunson (September 24): The white peach scale is increasing in abundance; it has been found at Estil recently.

RASPBERRY AND GOOSEBERRY

RASPBERRY CANEMAGGOT (Pogomyia rubivora Coq.)

Ohio E. W. Mendenhall (September 3): Very bad in some of the raspberry patches at Piqua and causing considerable damage.

OBSCURE WEEVIL (Sciopithes obscurus Horn)

Washington Wm. T. Baker (September 2): Adults were feeding on the new tips of raspberry at Elma and in many cases had cut the shoot practically in two so that the tip was dead.

GOOSEBERRY WITCH-BROOM APHID (Myzus houghtonensis Troop)

Ohio E. W. Mendenhall (September 15): Has been general on Houghton variety of gooseberry this spring and summer.

GRAPE

GRAPE BERRY MOTH (Polychrosis viteana Clem.)

West Virginia L. M. Pairs (September 19): Very abundant over the entire State and causing much damage.

Ohio T. H. Parks (September 23): Very abundant; big increase over last year in Lake Shore district. Unsprayed vineyards have varying infestation ranging from 10 to 30 per cent of the grapes infested with second-brood worms. (Erie, Lorain, and Cuyahoga Counties.)

GRAPE LEAFHOPPER (Erythroneura comes Say)

Alabama J. M. Robinson (September 23): Very abundant at Auburn.

GRAPE TUBE GALL (Cecidomyia viticola O.S.)

Iowa

C. J. Drake (August 29): The grape tube gall, C. viticola, is very common on the Beta variety of grapes at Lenox.

A RED MITE (Tetranychus sp.)

California

S. Lockwood (August 30): An undetermined species of Tetranychus was responsible for early May damage to grapes in the valleys near Vacaville. T. pacificus^{McG.} is becoming an increasingly important pest on grapes in the San Josquin Valley between Lodi and Manteca and farther south. Defoliation of vines in some vineyards is severe. The infested area seems to be enlarging.

ENGLISH WALNUT

RED-HUMPED CATERPILLAR (Schizura concinna S. & A.)

California

S. Lockwood (August 30): This insect caused some leaf destruction to English walnuts in Tulare County during the fore part of August.

A WALNUT APHID (Callipterus juglandis Frisch)

Oregon

D. C. Mote (July): This walnut aphid is more widespread this year in the Willamette Valley and just as abundant as last year, although in the locality where first discovered last year it is not so abundant as it was last season.

PECAN

FALL WEBWORM (Hyphantria cunea Drury)

North Carolina

W. A. Thomas (September 7): Damage is unusually heavy this fall at Chadbourn. Some of the forest trees are already completely defoliated. Tents are much more numerous than last season.

Missouri

K. C. Sullivan (September 23): Very abundant, especially in the southern part of the State. Defoliation of forest and fruit trees coupled with the very dry summer resulted in considerable loss.

Alabama

J. M. Robinson (September 23): Abundant over the State defoliating pecans.

Mississippi

Wm. L. Gray and J. Milton (September 20): Very abundant at Natchez and also in Claiborne, Jefferson, Franklin, Amite, Wilkinson, Alcorn, Tishomingo, Prentiss, and Tippah Counties.

California S. Lockwood (August 30): The webs are just beginning to appear in last of August along the banks of the Sacramento River in Sacramento and Yuba Counties.

CIGAR CASE BEARER (Coleophora fletcherella Fern.)

Mississippi H. Gladney (September 14): Very abundant in some groves of pecan in western Jackson County.

HICKORY SHUCK WORM (Laspeyresia caryana Fitch)

Georgia M. S. Yeomans (September): Moderately abundant in southern Georgia.

PECAN WEEVIL (Balaninus caryae Horn)

Georgia T. L. Bissell (September 23): Adults have become scarce in pecan orchards at Experiment and their activities have practically ceased. No oviposition has been known to occur since September 10. However, adults emerged from the soil September 18. The new generation of larvae began issuing from hickory and pecan nuts September 15, which is three weeks earlier than in 1928 at Barnesville.

RED-SHOULDERED SHOT-HOLE BORER (Xylobius basilare Say)

South Carolina M. H. Brunson (September 24): The red-shouldered shot-hole borer is very abundant in pecan grove at Newberry.

AN APHID (Myzocallis fumipennellus Fitch)

Mississippi H. Dietrich (September 21): Very abundant on pecans at Lucedale.

H. Gladney (September 14): Very abundant in some groves and injury severe. (Western half of Jackson County and in vicinity of Biloxi.)

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Florida J. R. Watson (September 23): Very abundant over the entire State.

Mississippi D. W. Grimes (September 22): Moderately abundant in Durant territory on cape jasmine.

Wm. L. Gray (September 20): Very abundant in Adams, Claiborne, Jefferson, Franklin, Amite, and Wilkinson Counties on privet and cape jasmine.

K. L. Cockerham (September 22): Heavy infestation noted at Biloxi on Satsuma orange trees. Great quantities of eggs found on leaves.

H. Gladney (September 14): Very abundant in western half of Jackson County.

Louisiana

W. E. Hinds (September 20): Very abundant in southern half of the State on citrus, privet, etc.

CITROPHILUS MEALYBUG (Pseudococcus gahani Green)

California

Monthly News Letter, Los Angeles County Agricultural Commission, Vol. 11, No. 9, September 15: The mealybug situation in the field in Los Angeles County looks more favorable than it has for several seasons past. The recent protracted warm weather has not only been responsible for an appreciable mortality in the younger mealybugs, but has materially increased the activity of the liberated *Cryptolaemus*.

The few exceptions to this condition are the result of the presence of a large gray native ant which is particularly active in protecting the mealybug from its insect enemies, including the *Cryptolaemus*.

Liberations of *Cryptolaemus* from the Insectary are being limited to a few orchards in which necessary treatment for other pests has interfered with the completion of the control of the mealybug.

CITRUS RED SPIDER (Paratetranychus citri McG.)

California

E. A. McGregor (September): A rather thorough survey of the five southwestern counties of California brought to light the fact that the citrus red spider is extremely scarce in this region. Of 55 orchards examined, only 6 supported sufficient citrus mites to justify control measures.

FIRE ANT (Solenopsis geminata Fab.)

Arizona

O. L. Barnes (September 18): Considerable injury to young citrus trees in a grove near Phoenix observed on September 9.

WHITE LINED SPHINX (Celerio lineata Fab.)

Arizona

O. L. Barnes (September 18): Slight damage to young citrus, grape foliage, pomegranate, and a few ornamentals near Phoenix was observed August 30. The larvae, so far as observed, confined their attacks to plants in fields and yards near adjoining desert areas. Within 10 or 12 days the larvae had disappeared from the various food plants. (The main food plants seemed to be various desert or native weeds.)

TRUCK - CROP INSECTS

BANDED CUCUMBER BEETLE (Diabrotica baltaeta Lec.)

Alabama K. L. Cockerham (September 20): These beetles were very abundant at this date on snap beans and sweet potatoes at St. Elmo. In fact, I have not seen them so plentiful during the entire year.

GREEN JUNE BEETLE (Cotinis nitida L.)

Mississippi R. W. Harned (September 23): Larvae were reported on September 17 as abundant in gardens at Prentiss.

LESSER CORN STALK BORER (Elasmopalpus lignosellus Zell.)

North Carolina C. H. Brannon (September): Snap beans in Currituck County are considerably damaged.

J. A. Thomas (August 30): The larvae have been unusually destructive to late corn and beans during the past month. Rather widespread damage to the tender buds of young strawberry plants has occurred recently in the Chadbourn district. It now appears that the strawberry trouble locally known as "dead crown" in young plants is partly traceable to the work of this insect.

South Carolina M. H. Brunson (September 24): Moderately abundant in beans at Luray and Clemson College.

Mississippi R. W. Harned (September 23): Severe injury to pea plants was observed at Shannon on September 11.

SOUTHERN GREEN STINK BUG (Nezara viridula L.)

Mississippi R. W. Harned (September 23): Injury to lima beans at Hattiesburg was reported on September 4 and injury to peas and lima beans at Natchez was reported on September 16.

GARDEN SLUG (Agriolimax agrestis L.)

Wisconsin E. L. Chambers (September 1): Slugs have been unusually abundant throughout the State this summer, especially during the past two weeks, doing serious damage to garden crops.

A MOLE CRICKET (Scaoteriscus sp.)

South Carolina M. H. Brunson (September 24): Mole crickets, Scaoteriscus sp., are moderately abundant in fall gardens in the coastal section of the State.

CHALGA (Scapteriscus vicinus Scud.)

North Carolina C. H. Brannon (September 2): This mole cricket is causing widespread damage in Carteret County.

MORMON CRICKET (Anabrus simplex Held.)

Colorado C. P. Gillette (September 21): The Mormon cricket was moderately abundant in Moffat and Routt Counties the past summer. Apparently very successful work for the extermination of this pest has been carried on by Mr. Frank Cowan of this office in cooperation with the Bureau of Entomology.

POTATO

POTATO ELLA BEETLE (Exitrix cucumeris Harr.)

Ohio T. H. Parks (September 23): Very abundant throughout the State. A very serious pest of the potato.

Colorado C. P. Gillette (September 21): Very abundant this year in the Greeley potato-growing section.

POTATO APHID (Uliolaea solanifolia Ashm.)

Ohio T. H. Parks (September 10): The potato aphid attacked the potato crop in some farms in Portage and Summit Counties, where much damage was done.

POTATO LEAPHOPPER (Empoasca fabae Harr.)

Virginia E. W. Poos (September 25): (Through Dr. Larrimer.) Dr. E. F. Smith and I are finding Empoasca sp., probably mostly fabae, unusually abundant at Arlington Farm, causing tipburn on late potatoes and yellowtop to some of the alfalfa in the varietal plantings which were cut the second time on August 5.

Wisconsin E. L. Chambers (September 1): Potato fields during recent dry weather have suffered severely from hopperburn throughout the State. Dahlia plants in gardens are being damaged and apple trees in nursery blocks have required continuous spraying to protect foliage.

South Dakota H. C. Severin (August 30): Very abundant on potato and Dahlia and attacking apple stock in nurseries.

TOMATO

A BEETLE (Blapstinus fuliginosus Csy.)

California S. Lockwood (August 30): Adults and larvae were found in tomatoes near Sacramento, during May. Many of the tomato plants had been girdled.

TOMATO WORM (Protoparce quinquemaculata Haw.)

Arizona O. L. Barnes (September 18): Very abundant on tomato plants at Joseph City and Woodruff in Navajo County as observed on August 25.

FIELD CRICKET (Gryllus assimilis Fab.)

California S. Lockwood (September 27): During the last of the month, G. assimilis has been responsible for a 10 per cent loss to ripe tomatoes in portions of a field of 170 acres near Sacramento.

CABBAGE

IMPORTED CABBAGE WORM (Pieris rapae L.)

Wisconsin E. L. Chambers (September 18): Very abundant; a complete loss of many heads, probably 25 per cent in some sections of Outagamie and Racine Counties.

DIAMOND-BACK MOTH (Plutella maculipennis Curt.)

Arizona O. L. Barnes (September 26): Abundant on cabbage and turnip at Woodruff.

CABBAGE APHID (Brevicoryne brassicae L.)

Iowa C. J. Davis (August 29): The cabbage aphid was extremely abundant in the vicinity of St. Ansgar, and in a few instances cabbage fields were very badly damaged.

Washington Wm. T. Baker (September 11): This pest is increasing in abundance on kale near Puyallup.

HARLEQUIN BUG (Murgantia histrionica Hahn)

Virginia P. J. Chapman (September 21): Three light infestations on collards and kale have been observed in the vicinity of Norfolk.

South Carolina M. H. Brunson (September 24): Moderately abundant; found all over the State and serious damage observed in places.

Mississippi

M. L. Grimes (September 21): Very abundant on most host plants in Lauderdale, Newton, Kemper, Clarke, and Neshoba Counties.

CABBAGE MAGGOT (Hylemyia brassicae Bouche)

Iowa

C. J. Drake (August 29): Young cabbage and radish plants in the vicinity of Cedar Rapids, Waterloo, Mason City, and Des Moines were considerably damaged. The insect occurs in considerable numbers near the larger cities, probably representing commercial jumps. Very little damage was done some distances from the larger cities or in the vicinities of small towns.

STRAWBERRY

A WEEVIL (Brachyrhinus rufosostriatus Goeze)

California

S. Lockwood (August 30): Two strawberry fields in Trinity County were almost totally destroyed. This is the first record of this insect in this county.

A CURCULIO (Tyloderma morbillosa Lec.)

Washington

Wm. W. Baker (August 30): The first record I have of this pest is that in May, 1926, several specimens of the adult were sent into Pullman. In April, 1929, I visited Grand Mound and obtained a fair series of adults, and on subsequent visits eggs, larvae, and pupae were taken, eggs on May 15 and mature larvae and pupae on August 6. This morning one larva, two pupae, and one recently emerged adult were sent into the office. (Attacking strawberry).

STRAWBERRY LEAF ROLLER (Ancyliis comptana Froel.)

Iowa

C. J. Drake (August 29): This insect was quite abundant in the vicinity of Boone, Des Moines, and ⁱⁿ Lee County. It is quite generally distributed over the State.

STRAWBERRY ROOT WORM (Paria canella Fab.)

Ohio

E. W. Mendenhall (September 10): The strawberry root worm is doing considerable damage to strawberry plants in Fairfield County. (Paria canella var. quadrinotata Say.)

California

S. Lockwood (August 30): This insect destroyed a large portion of a small strawberry patch at Lodi between July 15 and the last of the month.

STRAWBERRY CROWN MINER (Aristotelia fragariae Busck)

Washington

Wm. W. Baker (September 19): One field of strawberries of four different plantings near Puyallup was visited which did not yield extra well this season and in which the infestation was nearly 100 per cent. Even runner plants, not yet rooted, were infested, although the plants appeared to have made a good growth this season. Another field of a little less than an acre in extent which is located about one-fourth of a mile distant produced 8,300 lbs. this season and had only a very slight infestation.

STRAWBERRY WHITEFLY (Trialeurodes packardii Morrill)

Massachusetts

J. V. Schaffner, jr. (September 25): A market gardener called our attention to a severe infestation of whitefly on his strawberry bed in Andover. He reported having first noticed the whitefly on the strawberries last year and that the present infestation was partly due at least, to his using plants from the old bed. Perhaps the drougty weather was also favorable for their increase.

ASPARAGUS

ASPARAGUS BEETLE (Crioceris asparagi L.)

Iowa

C. J. Drake (August 29): This insect did considerable damage to asparagus in the vicinities of Cedar Rapids, Waterloo, Des Moines, and Ames. It is spreading westward very rapidly and small infestations have been reported in the western part of the State.

Colorado

C. P. Gillette (September 21): This insect is gradually spreading about Denver and a few specimens were found in the vicinity of Fort Collins for the first time this summer.

Oregon

D. C. Mote (July): Unusually severe this year. One grower had to dump over \$2,000 worth of asparagus because of this beetle.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

Virginia

P. J. Chapman (September 21): There is little likelihood that appreciable damage will take place to the fall crop of snap beans grown in the Norfolk-Portsmouth area. The harvest period extends from October 1 to November 15. Most serious injury took place this year in mid-August, owing to second-brood activity. Lima beans have been injured in practically all instances owing to their long period of growth.

- North Carolina C. H. Brannon (September 3): This insect has spread more than 10 miles into Brunswick County from the direction of New Hanover County.
- Kentucky W. A. Price (September 20): Very abundant on beans in the central and northwestern parts.
- Mississippi R. W. Harned (September 23): The first infestation recorded from Union County was found on August 19 near Blue Springs.
- Wyoming H. L. Sweetman (August): Very abundant at Wheatland in garden plots.
- Colorado C. P. Gillette (September 23): Moderately abundant in northwestern Colorado and western slope, also in the Arkansas Valley.
- Arizona O. L. Barnes (September 18): Very abundant in Maricopa, Yavapai, and Apache Counties.

LIMA BEAN VINE BORER (Monoptilota pergratialis Hulst)

- Mississippi R. W. Harned (September 23): Lima beans at Greenwood were reported as seriously injured on August 20.

BEAN THRIPS (Heliothrips fasciatus Perg.)

- California S. Lockwood (August 30): Responsible for severe loss to beans during early July on islands in the Sacramento delta region near Rio Vista.

CUCUMBERS AND MELONS

PICKLE WORM (Diaphania nitidalis Stoll)

- West Virginia L. M. Peairs (September 19): Very abundant over the entire State. We are receiving many reports of damage.
- Ohio T. H. Parks (September 20): Reports state that they were feeding on gourd, squash, and pickles in Butler and Preble Counties.
- Kentucky W. A. Price (September 11): There has been an unusual amount of injury this season.
- Iowa C. J. Drake (August 29): The pickle worm did some commercial damage to pickles in the vicinity of Davenport. Smaller infestations were reported from Newton and Ames. At Ames the worms were found infesting pumpkins growing in small gardens along with pickles and melons, but no injury was done to the pickles or melons.

Nebraska

M. H. Srenk (September 3): The pickle worm was sent in for the first time from any Nebraska locality, on August 21 (Frontier County). Probably 10 or 15 per cent of the cucumbers in this field were affected.

MELON APHID (Aphis gossypii Glov.)

Ohio

T. H. Parks (September 23): Very abundant; destroyed cucumber plantings in northern Ohio.

California

S. Lockwood (August 30): During the latter part of July this insect was responsible for severe damage in the melon fields adjoining Turlock. It was also present in alarming numbers in black-eyed bean fields. Parasitism by Aphidius testaceipes Cross. of 10 per cent was noted on July 31 in many of the melon fields. The number of aphids has been reduced since that time. This insect was found to be less injurious to melons at Hamilton City on August 26.

FIELD CRICKET (Gryllus assimilis Fab.)

California

S. Lockwood (August 30): This cricket was responsible for some local damage to the hollow-center group of melons during the last of July and the fore part of August at Williams. Four individuals of Paraschus thoracicus Stal. were observed preying on as many G. assimilis on the evening of August 2 at Colusa.

SQUASH

SQUASH BUG (Anasa tristis DeG.)

Arizona

O. L. Barnes (August 25): Abundant and causing considerable damage to squash and pumpkin plants in Yavapai, Navajo, and Apache Counties.

TURNIP

TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

Virginia

G. E. Gould (September 21): Present in injurious numbers through the Norfolk trucking section infesting turnip, kale, cabbage, broccoli, and collards. It is easily the predominant species on these crops, possibly 20 per cent of the aphid population being Myzus persicae Sulz. and the remainder R. pseudobrassicae.

CABBAGE WEEBORM (Hellula undalis Fab.)

Mississippi

R. W. Harned (September 23): A rather heavy infestation on turnips was reported on September 5 from Ellisville.

ONION

ONION THRIPS (Thrips tabaci L.)

Iowa

C. J. Drake (August 29): The onion thrips has been extremely abundant in the State and in many instances infestation runs from 200 to 300 thrips per plant. The most damage was done in the vicinities of Pleasant Valley, St. Ansgar, and Mitchell.

California

S. Lockwood (August 30): This thrips was responsible for severe loss to onions during early July on islands in the Sacramento delta region near Rio Vista.

SPINACH

GREEN PEACH APHID (Myzus persicae Sulz.)

Virginia

G. E. Gould (September 21): This aphid is appearing on the young spinach plants that are only a week old. This species is found with Rhopalosiphum pseudoobrassicæ Davis on turnip, kale, cabbage, broccoli, and collards. On kale M. persicae is of about equal importance with the turnip aphid.

SWEET POTATO

SWEET-POTATO SAWFLY (Schizocerus obonus Nort.)

Virginia

P. J. Chapman (September 10): The brood scheduled to appear in early September, according to observations in 1928, in several sweet-potato fields around Hickory and Pungo which had been badly defoliated in late July and early August was reduced to a point that larvae were found only after several days' search. This extreme reduction in numbers is believed to be due to an undetermined tachinid parasite.

MINT

MINT FLEA BEETLE (Longitarsus mentharhagus Gentner)

Indiana

J. J. Davis (September 9): The mint flea beetle damaged spearmint at Shipshewana.

MUSHROOMS

A MITE (Linobodes antennigenes Banks)

Ohio O. E. Gahn (September 10): This mite was found August 29 doing serious damage to cultivated mushrooms. It reduced the yield in one mushroom plant approximately three-fourths of a pound per square foot of bed space over an area of 325,000 sq. ft.

Illinois O. E. Gahn (September 10): This mite was found on June 24 doing commercial damage to mushrooms in the houses at Maperville.

Minnesota O. E. Gahn (September 10): Was found doing commercial damage to cultivated mushrooms in the sandstone caves along the Mississippi River in the vicinity of St. Paul and Minneapolis July 5.

FUNGUS GNATS (Mycetophilidae)

Illinois O. E. Gahn (September 10): Fungus gnats, Phora sp., were abundant in the mushroom houses at Maperville June 24.

Minnesota O. E. Gahn (September 10): A fungus gnat, Sciara sp., was found infesting mushrooms in the sandstone caves along the Mississippi River in the vicinity of St. Paul and Minneapolis July 5.

SPRINGTAILS (Collembola)

Minnesota O. E. Gahn (September 10): Springtails were found doing commercial damage to cultivated mushrooms which are being grown in the sandstone caves along the Mississippi River in the vicinity of St. Paul and Minneapolis. (Determined by Dr. Folsom as Achoanutes sp., heretofore undescribed in this country.

Missouri O. E. Gahn (September 10): Several specimens of springtails were received from a mushroom grower at Leeds May 1. These were collected from cultivated mushrooms and were determined by Dr. Folsom as Schottella sp., which species according to Dr. Folsom has not been collected heretofore in this country.

S O U T H E R N F I E L D - C R O P I N S E C T S

SUGARCANE

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana

W. E. Hinds (September 20): The sugarcane borer has become moderately abundant throughout the cane belt in the southern third of the State. The prospect is for a total damage below normal, which is 19 per cent of the crop. The parasitism of eggs of Diatraea by Trichogramma minutum Riley has been increasing rapidly during the past month and is now destroying more than 95 per cent of the borer eggs in many localities.

F O R E S T A N D S H A D E - T R E E I N S E C T S

PERIODICAL CICADA (Tibicina septendecim L.)

Illinois

W. P. Flint (September 7): Brood II appeared in Henderson, Warren, Knox, Fulton, McDonough, Hancock, Mason, Schuyler, Adams, Brown, Cass, Morgan, Pike, Scott, and in the edges of Tazewell and Menard Counties, with the heaviest emergence in the western edge of Mason and Fulton Counties. There were possibly scattered individuals a little farther east, but certainly no general appearance.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Ohio

T. H. Parks (September 10): More complaints than usual have been received from the southern and central parts of the State of attacks on evergreens.

E. W. Mendenhall (September 2): General in southwestern Ohio from Columbus south and southwest. It is very bad in several localities in this territory, including Columbus, Springfield, Dayton, and Cincinnati. Arborvitae and other evergreens seem to be their favorite food, but they are found on many deciduous trees and shrubs as well, causing a great deal of damage by defoliation.

Mississippi

R. W. Harned (September 23): Reported as abundant on fig trees at Amory on August 24 and on cedar trees at Duck Hill on August 21.

WHITE-MARLED TUSSOCK MOTM (Hemerocampa leucostigma S. & A.)

Nebraska

M. H. Svenk (September 3): The second brood defoliated the elms quite severely in parts of Lincoln during August.

TENT

GREAT BASIN/CATERPILLAR (Malacosoma fragilis Stretch)

California:

S. Lockwood (August 30): The great basin caterpillar destroyed the foliage of ceanothus and to a lesser degree manzanita over whole hillsides on the southern slope of Mount Shasta near Shasta City, during the latter part of June. The worms were so thick that trains were slowed to a standstill on the grades because of the crushed bodies on the rails. This was overcome by the locomotives being equipped with steam jets to blow the worms from the rails in advance of the wheels. Strawberries and garden peas were devoured also.

HEMLOCK SPALTCORM (Ellobia fiscellaria Guen.)

Michigan

E. I. McDaniel (September 12): For several years the hemlock looper has been destroying trees in the resort region of Michigan. A recent survey made by Mr. Morofsky of this department shows that one plat of 46 acres of forest land containing hemlock, pines, and hardwoods has been seriously attacked at Pentwater. The hemlock is all dead or nearly so and the larvae are feeding on the white, Austrian, Scotch, and jack pines, also on oak, alder, beech, and cherry. The only trees present that are not attacked are maples and locust. The hardwood is evidently being eaten because of the killing of the hemlock and pines. At the time of the survey (September 5) very few larvae and pupae were present, but many adults were to be found.

SATIN MOTH (Stilpnotia salicis L.)

New Hampshire

T. C. Craighead (September 13): On August 22, C. E. Hood and J. E. R. Holbrook of the gipsy moth laboratory noted feeding by the young larvae on the foliage of large trees of the large-toothed aspen, Populus grandidentata Mich., growing under woodland conditions in Kingston. Feeding had been so severe in one small area that the brown skeletonized foliage was noticeable from a considerable distance and here the hibernation webs were very abundant in crevices in the bark. This is the first record the gipsy moth laboratory has of a satin moth infestation occurring in a woodland area in New England.

BEECH

WOOLLY BEECH APHID (Prociphilus imbricator Fitch)

Maryland

J. A. Hyslop (September 22): Only one tree found infested and it but slightly. In the colony was a larva of a

predacious moth and beneath the colony on the trunk of the tree a mass of the fungus Scorias spongiosa Schw.

WOC-LINED PROMINENT (Memorocampa bilineata Pack.)

Michigan

E. I. McDaniel (September 12): An infestation of about 20 acres near Shelby was reported in 1928. The infestation is spreading quite rapidly and now involves an area about 17 miles long including between 2,000 and 2,500 acres. Larvae this year stripped the beech trees and attacked also some of the oaks. No damage was done to maples.

BIRCH

BIRCH LEAF-MINING SAWFLY (Phyllotoma nemorata Fallén)

General

T. H. Jones (September 20): From letter from Mr. Muesebeck: "Mr. Sheffner and I spent the period September 11 - 14 in an attempt to obtain some further information on the distribution of the introduced birch leaf-mining sawfly. Our observations were restricted to New Hampshire and Vermont in addition to a few points in northeastern Massachusetts. We followed a route along the eastern border of New Hampshire northward through Ossipee and North Conway to Gorham, from there westward to Lancaster, N. H., and St. Johnsbury, Vt., then southward through Barre and Rutland to Bennington, Vt., in the extreme southwestern part of the State, and from Bennington eastward through Brattleboro, Vt., Richmond and Rindge, N. H., and Ashburnham and Groton, Mass., to Melrose. From this it will be apparent that a considerable section of the White Mountain district of New Hampshire, a large part of Vermont, and a small district in southern New Hampshire were covered, in addition to a few points in Massachusetts. Because of the supposed preference of the insect for white birch, we scouted particularly areas where this species is more or less common, but in these districts other species of birch were also examined. Gray birch seemed to us to be almost as favorable a food plant as white birch, and larvae were also found in small numbers mining the leaves of yellow birch. From our hurried observations it appears that it is more abundant in the north and in areas of considerable elevation. At any rate, the heaviest infestations noted were on the hillsides in the White Mountain region of New Hampshire. Only one moderately heavy infestation was found well to the southward at Marlboro, Vt., and this on a hilltop at some elevation. This species was, however, found in small numbers at

many points along the entire route followed, including Chocorus, North Conway, Jackson, Pinckham, Gorham, Hinsdale, Richmond, and Rindge, N. H., Barre, Williamstown, Eastfield, Bethel, Gaysville, Sherburne, South Wellingford, and Marlboro, Vt., and Ashburnham, Groton, and Wakefield, Mass."

aine

H. B. Peirson (September 24): This insect has assumed epidemic proportions throughout the range of white birch in Maine.

APHIDS (Aphidae)

ew Hampshire
and
Massachusetts

J. V. Schaffner, jr. (September 25): Aphids on gray birch and paper birch were reported abundant in southern New Hampshire and Massachusetts. There was much yellowing of birch foliage, very probably owing to these insects.

CYPRESS

CYPRESS TWIG BORER (Phloeosinus cristatus Lec.)

Arizona

O. L. Barnes (September 18): Abundant on Monterey cypress at Thatcher where considerable injury to twigs was observed August 25.

ELM

ELM LEAF BEETLE (Galerucella xanthomelaena Schrank)

California

S. Lockwood (August 30): Work of this pest was very obvious on an estate near Berkeley; the middle of August there from 80 to 90 per cent of the elm leaves had been eaten.

A LEAF BEETLE (Callimorpha scalaris Lcc.)

Nebraska

H. H. Suenk (September 3): A Kuckolls County correspondent reports under date of August 19 that all of the elm trees in his wood lot had been stripped of leaves.

EUROPEAN ELM SCALE (Gossyparia smaragdina Mordax)

Ohio

E. T. Mendenhall (September 4): I find some of the elm trees planted on the streets of Columbus severely attacked.

Wisconsin

E. L. Chambers (September 1): A survey recently made indicates that the European elm scale is spreading slowly at Milwaukee, but in Madison the spraying campaign under way seems to be keeping it fairly well under control.

Colorado

C. P. Gillette (September 21): The elm scale is becoming rather common about Denver and is spreading to other localities. A few isolated trees occur in Fort Collins.

HICKORY

HICKORY BARK BEETLE (Scolytus quadrispinosus Say)

Michigan

E. I. McDaniel (September 12): The city forester of Lansing reported yesterday a number of dead hickory trees, mostly of the pig-nut type, in Bancroft Park in Lansing. An examination proved that between 400 and 500 trees were in a dying condition and that enormous numbers of larvae were now present. Many adult beetles are still in the galleries and flying about, although the great mass of beetles seem to be still in the larval stage. Some of the larvae have already excavated the deeper cells in which to pupate.

LARCH

LARCH SAWFLY (Neodiplosis michigani Hartig)

Maine

T. B. Peirson (September 12): This insect is becoming numerous on larch in several sections of northern Maine.

MULBERRY

CUCUMBER BEETLES (Diabrotica spp.)

California

E. B. Campbell (September 17): The new growth of mulberry trees on the properties of the American silk factory at San Marcos has been seriously damaged by Diabroticas. D. soror Lec. is by far the most abundant, while D. balteata Lec. is fairly common, and D. trivittata Mann. is occasionally seen.

LOCUST

A BUPRESTID BEETLE (Agrilus difficilis Gory)

Colorado

C. P. Gillette (September 21): Becoming very destructive to the honey locusts at Lamar.

GIANT SHIPPER (Evarxenus titurus Fab.)

Michigan

E. I. McDaniel (September 12): An unusual occurrence has come to light at Pontreaver. Mr. W. F. Morofsky while scouting for other insects happened on to an area of

about 12 acres of black locust trees practically stripped of their foliage by this rather uncommon insect. Larvae are beginning to prepare for pupation.

MAPLE

COTTONY MAPLE SCALE (Palvinaria vitis L.)

Indiana J. J. Davis (September 23): Reported abundant on maples at Saratoga on September 10.

Colorado C. P. Gillette (September 21): Seems not to be so abundant in northern Colorado as it was 30 years ago.

OAK

A SPANWORM (Ellopia fervidaria, var. somnaria Hulst)

Oregon D. C. Mote (August): T. H. Chamberlin reports the oak looper, E. fervidaria, var. somnaria, as doing considerable damage to oaks in the foothills of the Willamette Valley.

YELLOW-NECKED CATERPILLAR (Datana ministra Drury)

Mississippi R. W. Earned (September 23): Larvae were collected on oaks at Tiggins where they were completely defoliating the trees. Determined by C. Heinrich. Larvae tentatively identified by Mr. Langston were reported as slightly injuring oak trees at Corinth on September 21 by Inspector Jack Milton.

Texas F. L. Thomas (September 24): Datana caterpillars have been reported on oak at Huntville and College Station.

A MOTH (Anisota senatoria S. & A.)

Mississippi R. W. Earned (September 23): On September 9 Inspector J. P. Nislawski sent to this office some larvae collected on oaks with the information that they were completely defoliating the trees in the woods near Tiggins. These larvae were identified by C. Heinrich as A. senatoria and Datana ministra Drury. Larvae tentatively identified by Mr. Langston as A. senatoria S. & A. and A. virginiana Drury were reported as severely injuring red oak trees near Gloster on September 13.

PINE

PINE LEAF MINER (Paralechia pinifoliella Chamb.)

E. W. Mendenhall (September 3): I find the white pine in one of the nurseries in Miami County affected.

PINE BARK APHID (Chermes pinicorticis Fitch)

E. L. Chambers (September 1): Numerous complaints have been received during the past two weeks from all over the State of injuries caused by the pine bark louse and specimens submitted indicated their great abundance.

RED-HEADED PINE SAWFLY (Neodiprion lecontei Fitch)

C. H. Brannon (September 4): This insect is causing serious injury to pines in Edgecombe County.

WOOLLY PINE SCALE (Pseudophilippia quaintancei Oshl.)

E. W. Mendenhall (September 12): A block of about 500 pines at Sugar Grove in Hocking County are badly infested.

SPRUCE

SPRUCE BUDFORM (Harmoloxa fumiferana Clem.)

W. A. Price (September 20): Moderately abundant on spruce over the State.

SPRUCE GALL APHID (Chermes abietis L.)

E. L. Chambers (September 1): Specimens of the spruce gall aphid were brought in from Fond du Lac, where large numbers of trees (Norway spruce) are reported seriously deformed by this pest.

EASTERN SPRUCE BEETLE (Dendroctonus piceaperda Hopk.)

H. B. Peirson (September 12): There is grave danger of serious outbreaks of this bark beetle on spruce in northern Maine. Areas of infestation are being continually reported.

A TREWIL (Pissodes rotundatus Lec.)

E. I. McDaniel (September 4): To have just received a sample of the work in the stem of a small white spruce, Picea canadense, from an ornamental planting near Detroit.

This small tree stem, which measured about $\frac{3}{4}$ in. in diameter, was completely riddled between the bark and the wood by this species, several of which were ready to emerge. A few pupae were present and also several adult beetles which had not yet hardened and taken on their normal color. (There has been some doubt as to the host plant of this borer.)

WHITE-PINE WEEVIL (Pissodes strobi Peck)

Maine

H. B. Peirson (August): I think this is the first authentic report of the white-pine weevil attacking white spruce. Specimens were reared and compared with type material. (Collected at Waterville.)

WILLOW

WILLOW GROVE APHID (Melanoxanthium smithae Monell)

Indiana

J. J. Davis (September 23): Abundant on willow and annoying at Anderson as reported September 7.

INSECTS ATTACKING GREENHOUSE

AND ORNAMENTAL PLANTS

A WEEVIL (Brachyrhinus cribricollis Gyll.)

California

S. Lockwood (September 27): A weevil new to this State has been found in ornamentals in Los Angeles County. It has been determined as Brachyrhinus cribricollis. It has been found so far in or near the cities of San Fernando, Pasadena, and Montebello. So far the greatest damage has been to privet and Pittosporum tobira. Other hosts in these localities are: cork oak, white oak, Viburnum; Euonymus, Carolina cherry, Pyracantha ladia, carrob, escolonia, honey-suckle, jasmine, holly, crataegus, lauristinus, rose and zenia. In two instances where citrus trees were close to privet, some chewed leaves have been observed and a weevil was found at the base of two citrus trees. Marked damage has occurred only to privet and Pittosporum so far.

OBSOLETE WEEVIL (Sciopithes obscurus Horn)

Washington

Wm. W. Baker (August 27): The adults have been seen in two different localities near Puyallup feeding on rhododendron and azaleas and in one of these also on skimmia. One of these places has had an infestation of at least three-years' standing. The leaves are in some cases severely damaged. No very pronounced injury has

been noted due to the work of the larvae.

RED SPIDER (Tetranychus telarius L.)

E. W. Mendenhall (September 2): It has been a hard fight during the summer to control the mite in nurseries and about homes where evergreens are grown. It is also noticeable on apple and other fruit trees and maple, oak, and many shade trees.

J. J. Davis (September 23): Reported damaging evergreens, especially arborvitae and cedar, at Connorsville and Muncie the last of August and early in September.

E. L. Chambers (September 1): Evergreens throughout the State have suffered severely from the red spider during the past three weeks, owing to prolonged dry weather.

M. H. Suenz (September 3): During the whole of August, which was dry and hot, this insect was very injurious on various kinds of trees in all sections of the State. Spruce, elm, rose, mountain ash, apple, plum, peach, and cherry were reported affected. Especially severe infestations were reported from Douglas, Buffalo, Dundee, and Chase Counties.

S. Lockwood (August 30): This pest has done considerable damage to deciduous fruit in the interior valleys. Leaf drop in infested orchards runs up to 75 per cent. Evidence of the work has been observed from Makersfield north to the upper Sacramento Valley.

CYCLOPS MITE (Tarsonemus pallidus Banks)

E. L. Chambers (September 1): Several ranges of chrysanthemums and many cyclamen and geraniums growing in greenhouses in Milwaukee County are being severely injured.

TARNISHED PLANT BUG (Lycus pratensis L.)

C. E. Doucette (September 4): Ten per cent of the buds in a planting of chrysanthemums were so badly injured that no flowers could be expected to develop (in Kings County). Several other greenhouse men have reported that they have been troubled. (September 20): Tarnished plant bugs have been very numerous in flower gardens in Pierce and King Counties, where they have attacked particularly China aster the last three or four weeks and many deformed flowers have resulted. Considerable damage has occurred in aster plantings where flowers are grown for sale. In some instances 30 per cent of the flowers have had to

be discarded.

EUROPEAN EARWIG (Forficula auricularia L.)

Washington

Wm. T. Baker (September 2): Injury to dahlias at Montecano but more or less confined to the petals.

Washington

R. L. Webster (August 31): I have seen three specimens at Pullman. The first one I picked up on my own porch August 5, 1928. Since that time soon after my return from a trip to the coast, I thought it might have been carried back in blankets used while camping. A second specimen was collected on the college campus, sent to S. E. Crumb at Puget Sound and definitely determined as this insect. The third specimen was brought in today by Dr. W. F. F. Heald, of W. S. C.

ZEBRA CATERPILLAR (Manestra picta Harr.)

Maine

H. B. Peirson (September 2): This insect has assumed epidemic proportions at Augusta, where it is attacking general and flowering plants, such as gladiolus, geranium, etc.

ACACIA

FULLER'S ROSE BEETLE (Pantonomus fulleri Horn)

Connecticut

T. E. Britton (September 14): Found on acacia in a greenhouse in Norwalk, which is the first record for Connecticut.

BUTTERFLY BUSH

STALK BORER (Panopis nebris nitela Guen.)

Ohio

L. W. Mendenhall (September 2): The stalk borer is very abundant in a block of butterfly bush plants (Buddleia) in a nursery in Springfield.

CHRYSANTHEMUM

SWEET CLOVER STEM BORER (Rhopalosiphum lemniscata Tab.)

Florida

J. R. Watson (September 23): Reported as doing much damage to a planting of chrysanthemums near Tampa. This borer attacks ragweed and Bidens leucantha, which undoubtedly are common in the vicinity of the chrysanthemums.

RED BANDED LEAF ROLLER (Julia verotiana Walk.)

E. W. Mendenhall (September 4): Chrysanthemum plants in a greenhouse at Plain City are infested.

COLEUS

A MEALYBUG (Pseudococcus sp.)

J. J. Davis (September 23): Abundant and destructive on Coleus at Jeffersonville as reported August 28.

DAHLIAS

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror Lec.)

Wm. W. Baker (September 2): Although this pest has attacked dahlias at Montesano and Elma in the last three years which the writer has worked in this territory the damage is more severe than before. The foliage injury is not serious but the petals are often riddled.

GOLDEN GLOW

GOLDEN GLOW APHID (Macrosiphum rudbeckiae Fitch)

E. W. Mendenhall (September 3): Golden glow in some of the gardens at Piqua is full of the red composite aphid.

IRIS

IRIS BORER (Macronoctua onusta Grote)

E. I. Chambers (September 1): Iris plantings throughout the southern part of the State are being severely damaged. Several large plantings have as many as 50 per cent of the plants infested.

C. J. Drake (August 29): Found in considerable numbers in iris beds at Des Moines.

WIREWORMS (Elateridae)

C. F. Doucette (September 12): The largest producer of bulbous iris in the State has had a great deal of difficulty with wireworms. While the bulbs are not destroyed the feeding holes are so unsightly as to make it necessary to refrain from selling such bulbs. The damage has been as high as 30 per cent in a few varieties, but gen-

erally averaged from 10 to 15 per cent. It is considered a serious factor in iris production.

LILAC

LILAC BORER (Podosesia syringae Harr.)

Ohio

E. W. Mendenhall (September 2): Quite bad in the lilac plants in one of the nurseries in Springfield.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

Kentucky

W. A. Price (September 20): Moderately abundant on lilac generally.

Colorado

C. P. Gillette (September 21): Continues to spread in Colorado, occurring in most of the nurseries about Denver and is very destructive to ash and willow and especially lilac.

NARCISSUS

NARCISSUS BULB FLY (Merodon equestris Fab.)

Washington

C. F. Doucette (September 16): Infestations have been observed in practically every planting of narcissus in the State. Generally the infestation has been light, between one-half of 1 and 2 per cent, with some exceptions. In one planting of 75,000 bulbs grown in Tacoma, the infestation ranged from 40 to 65 per cent, depending on the variety. This is the most severe infestation I have ever seen. The large infestation was partly due to the fact that these bulbs had been in this field two successive years.

Oregon

C. F. Doucette (September 16): Infestations have been observed in several sections producing narcissus bulbs. I have not had an opportunity to study the conditions in Oregon as thoroughly as in Washington, but consider that they are quite similar, as all districts visited showed some infestation. Infestations of 3 per cent were observed in the Tillamook district, one-tenth of 1 per cent in the Columbia River district, and 1 per cent in the Willamette Valley.

BULB FLIES (Eumerus spp.)

Washington

C. F. Doucette (September 16): In the larger narcissus-producing districts in western Washington the infestations have been noticeably slight, and have not aggre-

gated over one-fifth of 1 per cent. In two plantings only was any excessive infestation found, and in both the particular blocks showing infestation were bulbs that had been weakened by frost injury and sunburn the previous summer, respectively. Infestation on tulips at Sunnydale was 0.08 per cent, in Dutch iris bulbs at Sumner and Bellevue 0.11 and 0.04 per cent respectively, and in St. Brigid anemone corms at Bellevue about 10 per cent. This is the first record of this plant as a host of *Eumerus*.

RHODODENDRON

RHODODENDRON LACEBUG (*Stephanitis rhododendri* Howv.)

sington Wm. T. Baker (August 27): Fairly thick on some varieties of rhododendron at Puyallup, apparently preferring the red varieties.

SNOWBALL

SNOWBALL APHID (*Anuraphis viburnicola* Gillette)

sington Wm. T. Baker (September 11): This pest has just recently returned to the snowball. It was present in usual numbers at Puyallup this spring.

YEW

BLACK VINE WEEVIL (*Brachyrhinus sulcatus* Fab.)

sington Wm. T. Baker (September 7): Leaves of *Taxus* at Puyallup are damaged to some extent, but the infestation is not particularly severe as yet.

INSECTS ATTACKING MAN AND

DOMESTIC ANIMALS

MAN

FLEAS (*Ostenoccephalus* spp.)

eral F. C. Bishopp (August): Numerous reports of houses infested with dog and cat fleas have come in during August. These reports are about equal in number to those of July. They came largely from the northeastern part of the United States, with the maximum number from Maryland and Pennsylvania.

Iowa C. J. Drake (August 29): Fleas, largely cat and dog, have been very abundant in Iowa this year. They seem to be pretty widely distributed and in several instances were extremely abundant in the basement and first floor of homes.

PUSS CATERPILLAR (Megalopyge opercularis S. & A.)

Mississippi R. W. Harned (September 23): Larvae of Megalopyge, probably opercularis, have attracted considerable attention throughout the State during the past month.

A WATER BUG (Corixidae)

Heiti R. C. Smith (August 28): An unusual flight of a small corixid was observed at lights at Petionville on August 28. Residents stated that they had never seen it before. They swarm around the lights and then drop to the floor or table, making it impossible to sit or eat near a light. So far as is known, it occurred only one night. Many specimens have been sent to Hungerford for determination.

CATTLE

STABLE FLY (Stomoxys calcitrans L.)

Nebraska M. H. Swenk (September 3): Annoyance to cattle continued during August, but not so severely as during July.

HORN FLY (Haematobia irritans L.)

General O. G. Babcock (August 23): The horn fly was not abundant on the eastern slope of the Rocky Mountains. More were observed on the waters of Clear Creek Canyon (altitude ranging from 8,000 to 9,000 feet), approximately 100 to 150 flies to each animal. At this point most showers occurred. In the dry areas of New Mexico the horn fly was not numerous, but east of El Paso, Tex., in districts where recent rains had occurred, the flies were observed to be from ^{1,000} 3,000 per animal. Farther east from the Guadalupe Mountains to Sonora, where the hot area began, and no rains had fallen, the fly was scarce.

REINDEER

MOSQUITOES (Culex sp.)

Alaska L. J. Palmer (August): Mosquitoes were unusually abundant this season and caused considerable loss to reindeer owners. Many fawns were killed and some grown animals. Reindeer and caribou were so reduced in flesh that they

finally died. Some small herds were kept on feed in corrals and smudges kept going day and night to save the animals from complete annihilation. Fur farmers suffered losses and out-of-door workers were terribly annoyed and at times forced to quit work. Farm operations were much interfered with, as it was necessary to keep horses shut up in barns most of the time.

PIGEONS

PIGEON HIPPOBOSCID (Lynchia naurea Bigot)

General F. C. Bishopp (August): This pigeon parasite has been complained of during August by pigeon raisers in South Carolina, Florida, and Texas. In some instances considerable losses were caused.

HOUSEHOLD AND STORED -

PRODUCT INSECTS

TERMITES (Reticulitermes spp.)

Idaho T. H. Parks (September 23): Moderately abundant over the State; becoming a serious pest, more complaints than usual.

Indiana J. J. Davis (September 23): Reported on August 26 as damaging house woodwork at Cynthiana.

Kansas R. L. Parker (September 25): Reported on August 21 in house at Lincoln, on September 10 in house attacking picture frame at Reading; on September 14 in house at Everest; on September 15 in house at Plainville.

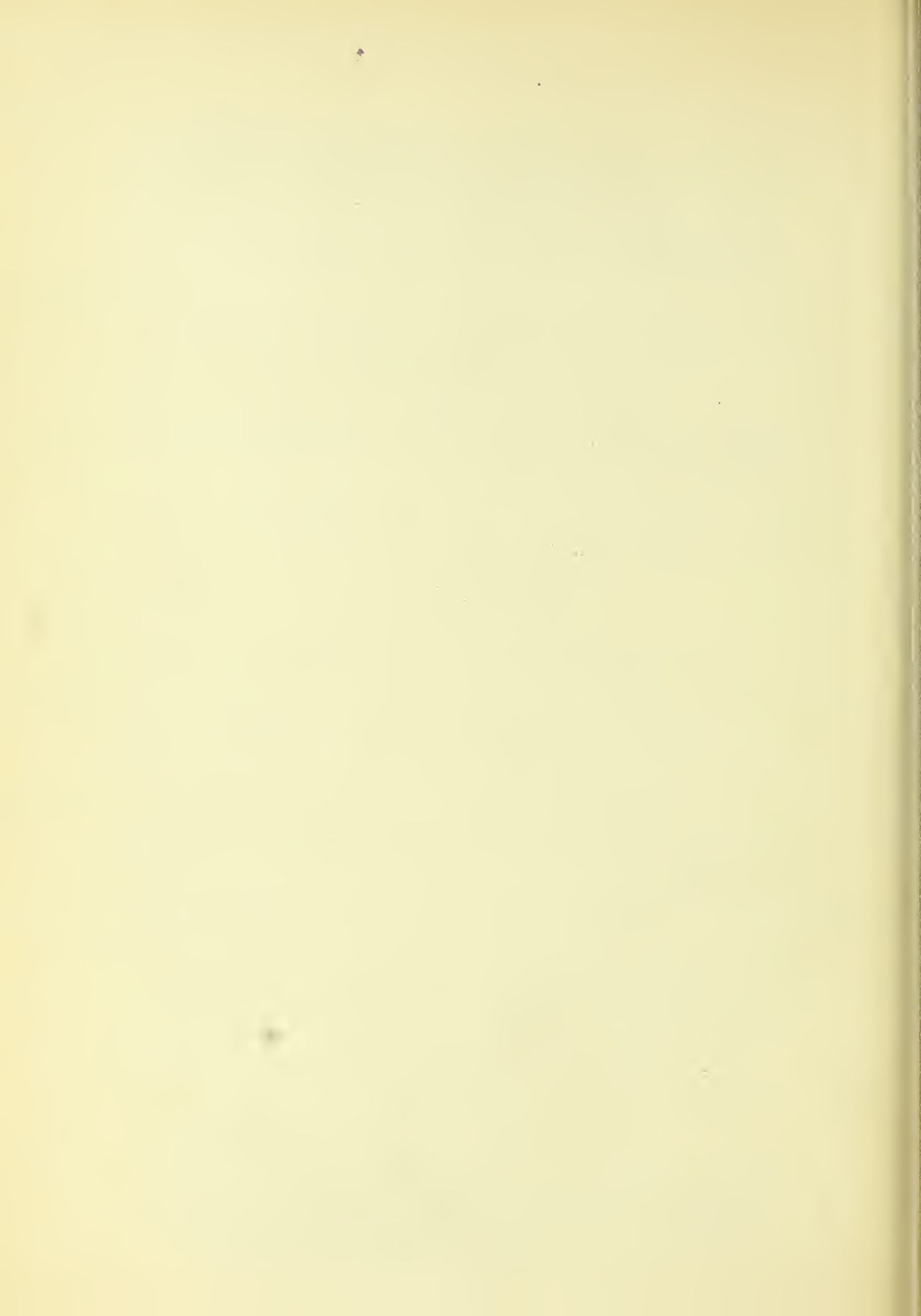
Mississippi D. W. Grimes (September 22): Termites are very abundant in Durant territory.

Arizona O. L. Barnes (September 26): Several complaints of injuries to houses and shade trees have been received from Phoenix.

California R. L. Parker (September 25): Termites were reported on September 16 in house at San Gabriel.

JUMPING BULLET GALL (Neuroterus saltatorius Hy. Edw.)

California S. Lockwood (August 30): Several requests for information regarding this insect have come to this office during the latter part of August. In one case in the city of Sacramento the sidewalk and paving were liberally sprinkled with the jumping galls under an oak tree.



THE INSECT PEST SURVEY BULLETIN

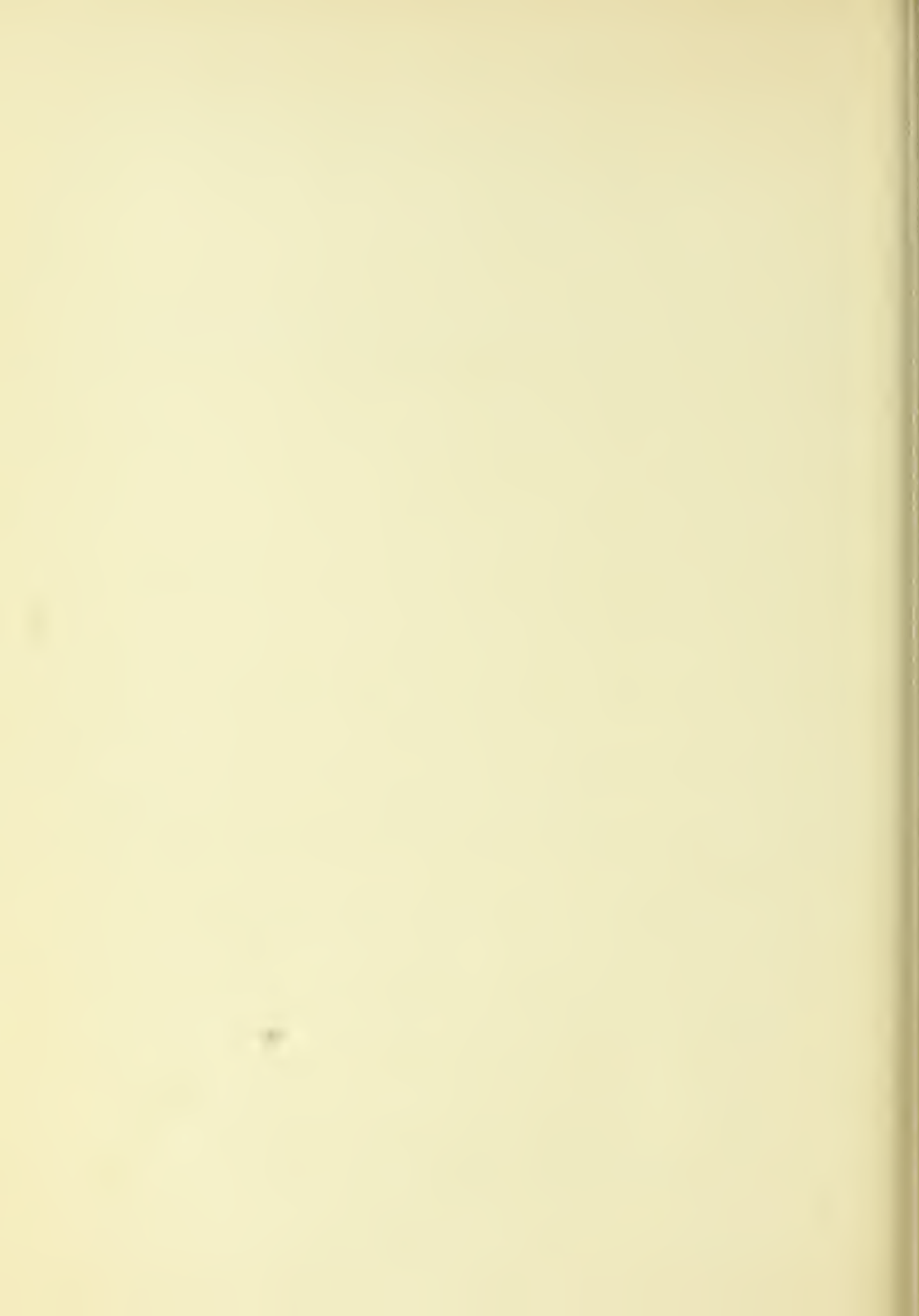
A monthly review of entomological conditions throughout the United States
issued on the first of each month from March to December, inclusive.

Volume 9

November 1, 1929.

Number 9

BUREAU OF ENTOMOLOGY
UNITED STATES
DEPARTMENT OF AGRICULTURE
AND
THE STATE ENTOMOLOGICAL
AGENCIES COOPERATING



INSECT PEST SURVEY BULLETIN

Vol. 9

November 1, 1929

No. 9

OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR OCTOBER, 1929.

Unusual numbers of grasshoppers appeared late in the season in the western Great Plains States and the northern Rocky Mountain region, and considerable apprehension is felt as to the outlook for next year.

The Hessian fly seems to be decidedly more numerous in southern Iowa and Nebraska, Illinois, and Missouri than for the past few years. Nebraska reports that a new outbreak is starting in the southeastern part of that State, and a general outbreak is reported from Missouri.

The fall armyworm continues to be reported as destructive in the Southern States. It destroyed many acres of winter spinach in the Norfolk district of Virginia and it completely destroyed newly-seeded alfalfa at one locality in Mississippi.

The clover seed midge has been seriously reducing seed yields in many districts in southern Idaho, and the clover head caterpillar is doing considerable damage to the seed crop in parts of Nebraska.

The pear psylla has been reported for the first time as a serious pest in southwestern Illinois.

Very considerable injury by the oriental fruit moth is reported from the Middle Atlantic, Southeastern, and East Central States from New Jersey to Georgia, and from Michigan to Tennessee.

The plum curculio is going into hibernation in phenomenally large numbers in Georgia and Tennessee.

The numbers of the walnut husk fly have been very materially reduced in the Chino-Pomona district in California by the practice of control measures.

No field infestation of the Mediterranean fruit fly was found in Florida or elsewhere in the United States during the past month, nor were any adults of this insect collected in traps.

The citrus whitefly seems to be quite generally troublesome in the gulf section from Florida to Mississippi.

The southern green stink bug has ruined the winter truck crops in several localities in the Southeastern States.

The first eggs of the vegetable weevil for this season were observed about October 1, in the vicinity of Gulfport, Miss. This insect is now known to occur in 85 counties in four of the Gulf States.

The pepper weevil has very seriously affected the crop of peppers in parts of New Mexico, Texas, and California. This insect has also seriously injured eggplant in southern California. This was of the Japanese variety. The common eggplant did not seem to be infested.

Additional reports of the finding of the Mexican bean beetle continued to be received during September and October. The range of this insect now extends well up into Michigan, New York, and Massachusetts. The spread to the south and west has been negligible.

The southern pine beetle is appearing in rather decidedly outbreak numbers in several localities in western North Carolina.

An infestation of the pink boll worm has been recently discovered near Phoenix, Ariz.

GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

entucky W. A. Price (October 18): Grasshoppers are moderately abundant on clover and alfalfa, principally in the northern and central parts of the State.

braska M. H. Swenk (October 1): Grasshoppers were present in unusual numbers over the whole State in September and continued to damage alfalfa fields and vegetable and flower gardens throughout the greater part of the month. Present indications are that there will be increased injury in 1930.

issouri L. Haseman (October 26): Melanoplus femur-rubrum DeG. is very abundant at Columbia.

daho C. Wakeland (October 20): Alfalfa seed growers of eastern Idaho report fairly heavy infestations this year and are concerned about losses next year. We recently examined some of the heaviest infested localities and were unable to find egg masses in abundance. The species most abundant were Melanoplus bivittatus Say, M. femur-rubrum DeG., Dissosteira carolina L., with a few individuals of Aulocara elliotti Thom. and Arphia pseudonictana Thom.

WHITE GRUBS (Phyllophaga spp.)

isconsin E. L. Chambers (October 19): White grubs are very abundant on nursery stock (especially evergreen seedlings in beds) in several sections of the State. Heavy beetle flights occurred in June. The situation has been developing very rapidly during the past few weeks and while we did not anticipate any injury whatever from white grubs, our nurserymen throughout the State are reporting that owing to the prolonged growing season the grubs are already doing serious injury to seed beds and have not yet started down below the frost line.

CEREAL AND FORAGE - CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

io T. H. Parks (October 24): Very few eggs were laid on the new crop except in Butler County where the infestation in the crop of 1929 was high. Daily counts of eggs laid on 100 plants in Butler County showed the maximum egg laying to be reached September 28 and to be over by October 13. Wheat sowed after the fly-free date (October 2) will be reasonably free from infestation. Seventy per cent of the eggs were laid from September 28 to October 1 inclusive.

Illinois

J. H. Bigger (October): There is a very severe infestation in early seedlings. I visited one field of 17 acres destroyed October 17.

Iowa

C. J. Drake (October 19): Moderately abundant in the southernmost tier of counties.

Nebraska

M. H. Swenk (October 1): There is decidedly more evidence of the Hessian fly in southeastern Nebraska this fall than there has been for the past three falls. The last cycle of damage in this region was in the winter wheat crop of 1921-22, and 1925-26, reaching its crest in that of 1922-23. No commercial damage occurred in the winter wheat crops of 1926-27, 1927-28, or 1928-29. Since the 1929 harvest, however, scattered and local infestations (mostly light) of the stubble have been reported and there has been a fall brood of fair strength active during the month of September. The infestations occur from Cass, Otoe, Nemaha, and Richardson Counties to Jefferson, Lancaster, Seward, and Hall Counties. It seems likely that a new cycle of fly damage is starting this fall. Where there was evidence of the presence of the Hessian fly at harvest or where puparia were common in the stubble in July and August, local delayed sowing was advised this fall. It seems probable that increased damage may make necessary a general campaign of delayed sowing in southeastern Nebraska in 1930. Already in Richardson County the early sown wheat is showing ^{some} fly damage.

Missouri

L. Haseman (October): There is a real outbreak covering much of the State this fall, but the extensive campaign urging the delaying of seeding has, I hope, greatly reduced the damage from the pest.

CORN

ARMYWORM (Cirphis unipuncta Haw.)

Arizona

O. L. Barnes (October 23): Considerable damage was done to small grains near Eagar. One field of several acres was completely stripped of foliage and the worms were destroying the maturing heads rapidly. The date was August 27. Larvae of this species were found scarce to moderately abundant at several places in Navajo County, but in no case in such numbers as at Eagar in Apache County. On September 21, specimens were received from C. C. Leuker, county agricultural agent of Coconino County, with a note that severe injury to cabbage and oats had been done at the county farm near Flagstaff.

CORN EAR WORM (Heliothis obsoleta Fab.)

Connecticut

J. E. Britton (October 24): More abundant throughout the State than usual.

Minnesota

A. G. Ruggles and assistants (October): Reported as very abundant in Mower, Renville, Nobles, and Hennepin Counties.

COLORADO CORN ROOT WORM (Diabrotica virgifera Lec.)

Nebraska

M. H. Suenk (October 1): During the first half of September additional reports were received of injury to corn in southwestern Nebraska.

SOY BEANS

VELVET BEAN CATERPILLAR (Anticarsia gemmatilis Hbn.)

Mississippi

R. W. Harned and assistants (October): Very abundant on soy beans in Yazoo County, many fields being entirely stripped. Also found in one alfalfa field. Moderately abundant at Lamar and Holly Springs stripping the foliage of soy beans.

SORGHUM

SORGHUM WEBWORM (Celama sorghiella Riley)

Missouri

L. Haseman (October 26): For the past two months the sorghum worms have been complained of by growers of grain sorghums in the southern counties of the State. In some sections the infestation has been very serious.

GRASS

CHINCH BUG (Blissus leucoconterus Say)

Connecticut

W. E. Britton (October 1): Adults and nymphs have killed the grass in a small patch of lawn in Hartford. Similar occasional injury has been observed in former seasons.

ALFALFA

FALL ARMYWORM (Laphygma frugiperda S. & A.)

Virginia

P. J. Chapman (October 2): This worm was very injurious to the young spinach crop in the area of Norfolk. Many acres were so badly damaged that they were plowed up and resown.

Mississippi

G. I. Worthington (October 19): Stripped 200 acres of new alfalfa. This will probably prove to be a total loss as the alfalfa was not securely rooted and was not able to withstand the defoliation.

ALFALFA THRIPS (Frankliniella occidentalis Perg.)

Utah G. F. Knowlton (October 28): This thrips has been abundant on alfalfa at Greenwood during the past season according to a report from Mr. Kay Sakimura.

CLOVER

CLOVER SEED MIDGE (Dasyneura leguminicola Lint.)

Idaho C. Wakeland (October 20): Seriously reducing the seed yield on red clover in many districts in southern Idaho.

CLOVER HEAD CATERPILLAR (Laspeyresia interstinctana Clem.)

Nebraska M. H. Swenk (October 1): Considerable damage was done to the red clover seed crop in Washington, Dodge, and Saunders Counties during the early part of September.

F R U I T I N S E C T S

APPLE

APPLE GRAIN APHID (Rhopalosiphum prunifoliae Fitch)

Ohio T. H. Parks (October 13): Migrants are appearing on apple trees and giving birth to oviparous forms. They are not very numerous.

APPLE APHID (Aphis pomi DeG.)

Kentucky W. A. Price (October 18): Reported from Henderson, Jefferson, and Fayette Counties.

Michigan R. H. Pettit (October 1): Very abundant at Fernville.

CODLING MOTH (Carpocapsa pomonella L.)

Illinois S. C. Chandler (October 1): Infestation by the late second brood and the third brood of the codling moth became more serious than was anticipated in the southern half of the State.

Missouri L. Haseman (October 19): Moderately to very abundant; very serious in the Ozarks, but in central and northern Missouri not so bad.

APPLE CRUMPLER (Mineola indigenella Zell.)

Missouri L. Haseman (October 26): Very abundant, particularly on young fruit trees and on the native haws in central Missouri.

A EUCOSMID MOTH (Enarmonia pyricolana Murtfeldt)

Georgia

O. I. Snapp (October 18): Infestation rather heavy in terminal buds of young apple trees at Albany.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Pennsylvania

T. L. Guyton (October 25): Reported as being on the increase in the Cumberland Valley orchards. This report came to me through the head of the market inspection service on fruit.

Georgia

O. I. Snapp (October 21): The San Jose scale has increased rapidly since the middle of August. Orders already placed with insecticide manufacturers indicate the use of more liquid lime-sulphur in the South this winter than last.

Florida

J. R. Watson (October 20): Moderately abundant; heavily infested with a fungus.

PEAR

PEAR PSYLLA (Psyllia pyricola Foerst.)

Illinois

S. C. Chandler (October): The pear psylla has become serious this year in a large pear-growing area centered at Alma, about 60 miles east of St. Louis. Aside from the characteristic defoliation, several growers reported that one-third of their crop was too small to ship this season whereas usually only about 10 per cent is undersized. This is the first time that the pear psylla has been reported as serious in Illinois.

TARNISHED PLANT BUG (Lygus pratensis L.)

Washington

E. J. Newcomer (October 21): This insect has been damaging mature pears at Yakima and Wenatchee by sucking juice, and has been coming into gardens and attacking roses, chrysanthemums, etc., recently.

PEACH

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

New Jersey

H. W. Allen (September 26): Counts of 3,300 peaches, varieties Karmel and Iron Mountain, in Burlington County, between September 19 and 25, indicate a total infestation of 51 per cent, of which 20 per cent was visible and 30 per cent invisible injury.

Pennsylvania

T. L. Guyton (October 25): The oriental fruit moth at Harrisburg by actual count on some Carman check trees runs

49 per cent wormy fruit. A check on Elberta ran practically the same as did those on Iron Mountain and Salway. I rather suspect that all untreated trees in the vicinity of Harrisburg would run about this rate of infestation. All of the fruits on these trees were cut open and examined. In examining these patches it was concluded that about one-half of the wormy fruit showed external evidence enough to cause the ordinary grader to throw it out.

Georgia

O. I. Snapp (October 11): The infestation is very heavy at Summerville. Apples are affording a host for the late broods.

Ohio

T. H. Parks (October 24): Twig injury is prominent on backyard trees in cities and farms. It is also evident in twigs of commercial orchards in northern Ohio where the peaches did not bear owing to winter killing. The Elberta crop in southern and central Ohio had a much lower infestation than in 1928 while late maturing peaches had almost no injury at Columbus compared to a very heavy infestation and partial crop loss in 1928. Quinces are very wormy again this year. The insect has not become a serious pest of apples in Ohio.

Kentucky

W. A. Price (October 18): Very abundant in the northern and western parts of the State. A \$17,000 loss was caused by it in Jefferson County this year in one orchard.

Michigan

R. H. Pettit (October 18): Moderately abundant from Anne Arbor to the Ohio border on the eastern side of the State.

Tennessee

O. I. Snapp (September 28): The infestation is heavier around Harriman than it has been before. Some young orchards show considerable twig damage by earlier generations. From 15 to 20 per cent of the fruits from some peach orchards in this district were infested.

PEACH BORER (Aegeria exitiosa Say)

Georgia

O. I. Snapp (October 18): In taking results of control experiments in the Fort Valley section, we find the infestation to be much heavier than normally. (October 21): We are still finding a few pupae. Therefore, there is a possibility of late oviposition this year.

C. H. Alden and M. S. Yeomans (October 19): Moderately abundant at Cornelia.

Texas

F. L. Thomas (October 21): Very abundant at Nacogdoches; lost about 75 trees last summer and now looking for control measures.

PEACH TWIG BORER (Anarsia lineatella Zell.)

Arizona

O. L. Barnes (October 23): Reported as abundant at St. Johns October 1.

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Georgia O. I. Snapp (October 21): Practically all adults have left orchards for hibernation quarters. The population in hibernation is unusually large in the middle Georgia peach belt.

Tennessee O. I. Snapp (September 28): The infestation this year was the heaviest ever experienced by Tennessee peach growers. The fruit in some orchards showed a 35 per cent infestation. An organization has been perfected to wage a campaign of curculio suppression throughout the district of Kingston.

BUMBLE FLOWER BEETLE (Euphoria inda L.)

Nebraska M. H. Swenk (October 1): In Saunders County during the second week in September the brown fruit chafer was reported as doing extensive damage to peaches by eating holes in them.

GRAPES

GRAPE BERRY MOTH (Polychrosis viteana Clem.)

Ohio T. H. Parks (October 24): Very abundant in the Lake area of Cuyahoga and Lorain Counties.

Nebraska M. H. Swenk (October 1): A Pawnee County correspondent sent samples of grapes badly injured during the first week in September.

GRAPE CURCULIO (Craponius inaequalis Say)

Ohio E. W. Mendenhall (October 3): Indications are that the grape curculio is quite bad in Columbus and vicinity.

GRAPE LEAFHOPPER (Erythroneura comes Say)

Nebraska M. H. Swenk (October 1): Injury to grapes and woodbine foliage, especially the latter, was reported during September.

PACIFIC RED SPIDER (Tetranychus pacificus McG.)

California E. A. McGregor (October 28): This mite, possibly the worst pest of deciduous fruit crops in central California, experienced a remarkable decimation in numbers late this summer. During recent years this mite has become increasingly threatening in vineyards, and it was severely attacking grape vines as late as September 1. However, at about that time, Scolothrips sexmaculatus Perg. underwent such an increase in numbers that it succeeded in almost completely exterminating the mite in a very short time.

WALNUT

WALNUT HUSK FLY (Rhagoletis juglandis Cress.)

California Monthly News Letter, Los Angeles County Agricultural Comm., Vol. 11, No. 10, October 15: Results of control work conducted in the Chino-Pomona district against the walnut husk fly are very satisfactory. In several treated orchards which last year showed 90 per cent of the nuts to be infested, it was almost impossible to find a single infested nut this season. In contrast, untreated orchards showed a very heavy infestation.

CITRUS

MEDITERRANEAN FRUIT FLY (Ceratitis capitata Wied.)

Florida Plant Quarantine and Control Administration (November 1): No Mediterranean fruit fly was found in Florida during October.

California Monthly News Letter, Los Angeles County Agricultural Comm., Vol. 11, No. 10, October 15: A recent survey of Catalina Island has failed to show any Mediterranean fruit fly to be present. The inspection of the Island was carried out as part of the State-wide survey.

CITROPHILUS MEALYBUG (Pseudococcus gahani Green)

California Monthly News Letter, Los Angeles County Agricultural Comm., Vol. 11, No. 10, October 15: Since July 1 the County Insector has distributed 172,000 of the new parasites of the citrophilus mealybug which were recently brought into California from Australia by the University of California through the citrus Experiment Station at Riverside. These parasites are known as Coccophagus gurneyi Compere. Liberations have been confined to placing small colonies on as many infested properties and over as wide an area as possible for establishment purposes only.

Previous liberations indicate that the new parasite is becoming well established and that, if it does not prove a controlling factor alone, it will undoubtedly be an invaluable assistant factor in keeping this serious citrus pest under control. At present the mealybug situation in the field is very satisfactory with all infestations at an extremely low seasonal ebb.

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Georgia C. H. Alden and M. S. Yeomans (October 19): Moderately abundant in southern Georgia.

Florida J. R. Watson (October 20): Very abundant; heavily infested by a fungus.

Alabama J. M. Robinson (October 21): Moderately abundant at Spring Hill, "spotted" over Mobile and Baldwin.

Mississippi R. W. Harned and assistants (October): Reported as very abundant in eastern Jackson, Yazoo, Stone, and Harrison Counties.

FIRE ANT (Solenopsis geminata Fab.)

Texas S. W. Clark (October 2): Very abundant and doing commercial injury to considerable numbers of young citrus trees throughout the whole lower Rio Grande Valley.

T R U C K - C R O P I N S E C T S

SOUTHERN GREEN STINK BUG (Nezara viridula L.)

South Carolina M. H. Brunson (October): Very abundant on lima beans at Ridgeland.

Florida F. S. Chamberlin (October 16): This insect is unusually abundant on all truck crops. Fields of turnips and okra are being entirely ruined in certain instances.

Mississippi P. H. Colmer (October 19): This insect has ruined most of the fall plantings of tomatoes in the southern part of Jackson County.

BANDED CUCUMBER BEETLE (Diabrotica balteata Lec.)

Mississippi R. W. Harned (October 29): Specimens were found injuring snap beans at Church Hill on October 4.

R. P. Colmer (October 15): Very abundant on tomatoes at Pascagoula.

O. T. Deen (October 19): Very numerous and doing considerable damage to young turnips near Kiln, Hancock County.

VEGETABLE WEEVIL (Listroderes obliquus Gyll.)

Mississippi M. M. High (October 26): The vegetable weevil at Gulfport is now becoming active, the first eggs of the season having been observed about the first of the month. The weevil is now known to occur in 85 counties in four southern States.

FIELD CRICKET (Gryllus assimilis Fab.)

Nebraska M. H. Swenk (October 1): Crickets of this species were reported by a Custer County correspondent as doing damage in his strawberry bed by eating the fruits at night.

MOLE CRICKETS (Scapteriscus spp.)

- North Carolina C. H. Brannon (October 7): Scapteriscus vicinus Scud., probably worse than any other insect pest in the Wilmington trucking section, is doing an enormous amount of damage.
- South Carolina M. H. Brunson (October): Scapteriscus sp. is very abundant in the Pee Dee and the coastal plains sections.
- Mississippi M. M. High (October 26): Scapteriscus acletus R. & H. is now abundant over most of the trucking region along the Mississippi coast. It was observed first at Gulfport and Long Beach by the writer in November, 1926, and has spread rapidly since. It is now so numerous in some fields that three plantings of such crops as cabbage, spinach, etc., have had to be made owing to its burrowing in the rows just as the plants came up.

POTATO AND TOMATO

HORNWORMS (Protoparce spp.)

- Nebraska M. H. Svenk (October 1): A commercial grower of tomatoes in Saline County reported the middle of September that P. sexta Johan. and P. quinquemaculata Haw. had been a real pest in his crop this year.

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

- Wisconsin E. L. Chambers (October 19): Late potatoes are severely injured in the northern potato-growing counties.

POTATO LEAFHOPPER (Empoasca fabae Harr.)

- Wisconsin E. L. Chambers (October 19): Moderately abundant; injury continued on increase until frost.
- Minnesota L. L. Knuti (October 17): Very abundant at Cloquet; caused plants to dry up about two weeks before time.

PEPPER

PEPPER WEEVIL (Anthonomus eugenii Cano)

- General J. C. Elmore (September 17): The pepper weevil was found to be well distributed in pepper fields near Las Cruces and Old Mesilla, New Mexico, and small plantings of Chili and bell peppers at Roswell, N. Mex., were almost a total failure. The infestation caused an estimated loss of 90 per cent. Light pepper weevil infestations were found in garden plantings of Chili pepper growers at San Antonio, Tex. At Poteet, Tex., growers

reported damage so heavy that pepper fields were plowed up earlier in the season, but the infestations were not verified by the writer. The insect is well distributed near Venton, Tex. (October 1): Pepper weevil damage has been very heavy in Ventura County, near Camarill, Calif. Two fields were a total loss by September 30. Practically all pepper fields in the county are affected, damage ranging from a trace to almost 100 per cent. (October 16): The pepper weevil has been discovered infesting eggplant in Orange County, California. Larvae and eggs were found both in the buds and in the pods. A Japanese variety is more susceptible although larvae and eggs were found in the buds and in the pods of the common variety. In two localities the Japanese eggplant was very heavily infested, but it was growing in the edge of heavily infested pepper plants. In a third locality where only the common variety was growing among heavily infested peppers no weevil infestations were found.

CABBAGE

IMPORTED CABBAGE WORM (Pieris rapae L.)

- Illinois C. C. Compton (October): Very injurious to cabbage and turnips in Cook County.
- Wisconsin E. L. Chambers (October 19): Continues to be extremely injurious to cabbages in Outagamie, Winnebago, Brown, and Racine Counties.

CABBAGE LOOPER (Autographa brassicae Riley)

- Illinois C. C. Compton (October): More numerous and destructive on late cabbage in Cook County than usual.
- Mississippi R. J. Harned (October 23): Reported as injuring collards at Tyro on October 10 and as abundant on mustard and other garden crops at Hazelhurst on September 23.
- Texas S. J. Clark (September 26): Rapidly becoming abundant in cabbage seed beds at Weslaco.

CABBAGE WEBWORM (Hellula undalis Fab.)

- Mississippi M. M. High (October 12): Quite abundant on turnip, cabbage, etc., from Choctaw County to the coast. Some early plantings in September were almost completely destroyed.
- R. J. Harned (October 23): Reported abundant on cabbage at Hattiesburg on October 1 and on collards at Tyro on October 10.

CABBAGE APHID (Brevicoryne brassicae L.)

- West Virginia L. M. Pears (October 24): This insect is unusually abundant on cabbage, turnips, etc.
- South Carolina W. J. Reid (October 26): Aphids have been unusually abundant on cabbage and collards and have done considerable damage throughout the month of October near Charleston. The plants are being attacked both in the plant bed and after being transplanted to the field. The worst injury was suffered during the early part of the month, at which time the weather was very unfavorable for plant growth, as well as for efficient use of control measures. Insect enemies, ladybird beetles, and the larvae of syrphus flies have done much to reduce the infestation.
- Kansas R. L. Parker (October 21): Reported from Osage City.

STRAWBERRY

LATE STRAWBERRY SLUG (Empria maculata Nort.)

- Nebraska M. H. Swenk (October 1): The late strawberry slug was working on strawberries in Douglas County as late as September 26, in one instance to a damaging extent.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

A correction - The note on page 337 of the Insect Pest Survey Bulletin from Arizona should read Navajo County instead of Maricopa County.

- Massachusetts N. F. Howard (September): Reported from Ashley Falls, Berkshire County.
- Connecticut N. F. Howard (September): Reported from Stamford, Westport, New Canaan, Wilton, Ridgefield, Brookfield, Sherman, Darien, Washington, Salisbury, Canaan, Orange, Meriden, Wallingford, New Haven, and Hartford.
- New York N. F. Howard (September): Reported from North Salem, Red Hood, Saugerties, Washington Hollow, Poughkeepsie, Ovid, and Ithaca.
- Virginia P. J. Chapman (October 15): The second crop of lima beans from fields planted in May and June is being considerably reduced on the Eastern Shore. The present damage is being done principally by newly emerged beetles. Injury to the fall crop of snap beans generally in the Norfolk-Fortsmouth trucking district has been slight.

- West Virginia L. M. Peairs (October 24): Moderately abundant at Morgantown; generally there are fewer over the State than there were in 1928.
- South Carolina N. F. Howard (September): Reported from the following counties: Marion, Horry, Williamsburg, western edge of Georgetown, northern third of Berkeley, and northern third of Dorchester.
- Indiana N. F. Howard (September): Reported from Vincennes and Warsaw, but no beetles found in Columbia City where they were found in 1928 by Mr. Mason.
- Michigan N. F. Howard (September): Reported from Hastings, Battle Creek, and Three Rivers. Beetles not found at Holt near Lansing where they were found by Mr. Mason in 1928.
- Tennessee N. F. Howard (September): Reported from Whiteville, Brownsville, and Jackson.
- Mississippi N. F. Howard (September): Reported from Ripley, Hickory Flat, and Columbus.

R. W. Harned (October 23): Found at Houston, Chickasaw County, on October 16 for the first time.

LESSER CORN STALK BORER (Elasmopalpus lignosellus Zell.)

- Arizona O. L. Barnes (October 23): Caused moderate damage to a field of beans a few miles north of Phoenix.

BEAN LEAFHOPPER (Empoasca mali LeB.)

- Texas S. W. Clark (October 3): Very abundant in young snap beans throughout the whole lower Rio Grande Valley. This is a limiting factor in this bean-growing section every year.

PEAS

PEA MOTH (Laspeyresia nigricana Stoph.)

- Michigan R. H. Pettit (October 5): I have just received a sample of the work of the pea moth from Fibre, Chippewa County. The gentleman reports that considerable trouble has been experienced this year, some fields having been affected very seriously.

TURNIP

TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

- South Carolina W. J. Reid (October 26): Unusually destructive to young tur-

nip plants at Charleston during the month of October, especially during the early part of the period when the weather was very unfavorable both for plant growth and effective use of control measures. Many growers were forced to abandon part of their turnip plantings as a result of the plant lice depredations. Insect enemies of the aphids have done much to reduce the infestations.

Alabama

J. M. Robinson (October 21): Very abundant on turnips at Auburn.

Mississippi

M. M. High (October 26): The turnip louse is just now showing up in injurious numbers on turnips and collards at Gulfport, but is being held in check in some fields by Hippodamia convergens Guer.

R. W. Harned (October 23): Sent in recently from Hattiesburg where they were collected on cabbage.

C. Hines (October 14): Very abundant in Yazoo County.

K. L. Cockerham (October 19): Noticed damaging turnips and mustard at Biloxi today.

Kansas

R. L. Parker (October 21): Reported from Osage City.

SUGAR BEETS

BEET LEAFHOPPER (Eutettix tenellus Baker)

Idaho

C. Wakeland (October 20): Mr. Haegate reports very large populations in the desert areas for this season of year as determined by his regular collecting trips to desert field stations.

Utah

G. F. Knowlton (October 2): Still abundant in many of its desert breeding grounds, but present in rather small numbers in most sugar-beet fields in northern Utah. Some late curly-top is occurring in Boxelder, Davis, Salt Lake, and Utah Counties, but in general the beets had attained a good size before severe curly-top symptoms developed. The beet crop in this section is better than average. (October 28): The most serious injury has resulted to fields at Hooper, Penrose, Thatcher, Bothwell, Magna, Granger, and some of the outlying fields west of Brigham City, Corinne, Garland, Tremonton, Fielding, and a few other localities.

BANDED FLEA BEETLE (Systema taeniata Say)

Utah

G. F. Knowlton (October 28): The banded flea beetle was abundant in a few localities, including Ogden, Wellsville, and Hyrum, but seldom did appreciable damage.

HOP FLEA BEETLE (Psylliodes punctulata Melsh.)

Utah

G. F. Knowlton (October 28): A black flea beetle, P. punctulata, was abundant in the sugar-beet fields of northern Utah during the spring of 1929, and in many cases held back the development of young beets just as they were coming through the ground.

LETTUCE

POPLAR LEAF STEM GALL (Pemphigus populitransversus Riley)

California

E. O. Essig (October 7): This insect appeared in great numbers on the roots of lettuce in large commercial plantings in Monterey and Santa Cruz Counties in May, June, July, and August. Winged forms appeared in August.

CABBAGE LOOPER (Autographa brassicae Riley)

Arizona

O. L. Barnes (October 23): The fall lettuce crop in the Salt River Valley has been considerably damaged. It is estimated that the damage, considering the crop as a whole, is from 10 to 20 per cent. In some fields the damage ranges from 10 to 50 per cent.

FIELD CRICKET (Gryllus assimilis Fab.)

Arizona

O. L. Barnes (October 23): Some injury has been reported to young lettuce in the Salt River Valley during the past month. The species, I believe, is G. assimilis.

S O U T H E R N F I E L D - C R O P I N S E C T S

COTTON

PINK BOLL WORM (Pectinophora gossypiella Saund.)

Arizona

U. S. D. A. Press release, October 31: The recent discovery of the pink boll worm near Phoenix has resulted in enlargement of the area under Federal quarantine on account of this pest, says Secretary Hyde of the U. S. Department of Agriculture. Maricopa and Pinal Counties have been added to the quarantine area, making a total of five counties within the regulated area in Arizona.

Enlargement of the quarantine area in Texas and New Mexico was not necessary. The effect of the extension of the quarantine to the added Arizona counties is to restrict the interstate movement of cotton and certain articles from these counties.

SUGARCANE

SUGARCANE BORER (Diatraea saccharalis Fab.)

Mississippi

T. E. Holloway and W. E. Haley (September 27): The writers have just made a hasty survey of the Gulf coast of Mississippi and have failed to find the sugarcane borer in the small and widely separated plantings of sugarcane. The slight damage to sugarcane which was observed was attributed to native pests.

SUGARCANE MEALYBUG (Trionymus boninsis Kuw.)

Louisiana

T.E. Holloway and W. E. Haley (October 9): Limited observations indicate that the sugarcane mealybug has been abundant on some of the areas of sugar plantations, but that it has been largely controlled by the green fungus, Aspergillus sp.

F O R E S T A N D S H A D E - T R E E I N S E C T S

LEOPARD MOTH (Zeuzera pyrina L.)

Rhode Island

A. E. Stone (October 21): The leopard moth has been reported oftener this year than at any time since it reached the State.

Twig Girdler (Oncideres cingulatus Say)

Kentucky

W. A. Price (October 18): Doing considerable damage in Ohio, Nelson, and Hardin Counties.

WALKINGSTICKS (Phasmidae)

Ohio

T. H. Parks (October 1): An outbreak of some species in Ross County was reported to this office by our State Farmers' Institute supervisor. It had practically defoliated some trees.

Missouri

L. Haseman (October 26): During the fore part of the month walkingsticks were moderately abundant in young orchards and on forest trees in central Missouri.

BOXELDER

BOXELDER BUG (Leptocoris trivittatus Say)

Iowa

C. N. Ainslie (October 8): As a climax to a gradual and steady increase for several years the boxelder bug has become a real nuisance in the Sioux City district this fall. The pests mass on trees in many localities and are becoming a decided nuisance to housewives because of their habit of swarming into houses as the outside air becomes colder.

Nebraska M. H. Swenk (October 1): This insect began to be complained of during the latter part of September as it began entering houses.

CEDAR

A MITE (Eriophyes thujae Garman)

Michigan I. E. McDaniel (October 29): I have recently encountered this mite on red cedar. It is present locally in sufficient numbers to attract attention. It is seldom mentioned in recent literature and its occurrence in Michigan may be of interest.

CYPRESS

CYPRESS TWIG BORER (Phloeosinus cristatus Lec.)

Arizona O. L. Barnes (October 23): The cypress twig borer is causing some injury to cypress and arborvitae trees in Phoenix. Mr. Mendenhall reports that it is severely damaging cypress trees of all varieties near Safford.

OAK

ORANGE-STRIPED OAK WORM (Anisota senatoria S. & A.)

North Carolina C. H. Brannon (October 25): Observed defoliating oak trees in the vicinity of Star, Randolph County.

PINE

SOUTHERN PINE BEETLE (Dendroctonus frontalis Zimm.)

North Carolina R. A. St. George (October 26): Following a deficiency of from 1 to 3 inches of rainfall during July and August in many localities in western North Carolina, the southern pine beetle has become unusually active. In addition to rather large outbreaks located at Hot Springs and Cherokee, many minor spot infestations have been located between West Asheville and Sylva. These smaller infestations averaged about 50 trees in each locality. At Hot Springs 2,716 pines were involved. The attack started from a tree struck by lightning during July.

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

Missouri L. Haseman (October 26): Attracting attention of both nurserymen and those who are using pines for ornamental purposes. This species has been serious in parts of Missouri during the past year and, as a rule, during the fall, has attracted considerable attention.

SPRUCE

SPRUCE BUDWORM (Harmologa fumiferana Clem.)

Wisconsin

E. L. Chambers (October 19): Considerable injury to ornamental plantings of blue and Norway spruce throughout central and southern Wisconsin has been reported.

WILLOW

GIANT WILLOW APHID (Pterochlorus viminalis Boyer)

A correction - Specimens of the aphid reported as Longistigma caryae Harr. on page 259 of the Insect Pest Survey Bulletin have later been determined by P. W. Mason as P. viminalis.

Utah

G. F. Knowlton (October 28): The giant willow aphid has been extremely abundant on willow during the latter part of the summer on the campus of the Utah State College at Logan.

INSECTS ATTACKING GREENHOUSE
AND ORNAMENTAL PLANTS

ONION THRIPS (Thrips tabaci L.)

Illinois

C. C. Compton (October): This thrips, which has been very destructive to onions this summer, is now entering greenhouses in Cook County, where it is causing severe damage to carnations, chrysanthemums, and roses.

Mississippi

M. M. High (October 26): The wheat thrips, Frankliniella tritici Fitch, is abundant on rose along with Thrips tabaci L. on rose and chrysanthemum.

A GIRDLER (Onicideres trinodatus Casey)

Texas

S. W. Clark (October 1): Very abundant on Huisache and mesquite in ornamental plantings at Weslaco.

CHRYSANTHEMUM

BLACK CHRYSANTHEMUM APHID (Macrosiphoniella sanborni Gill.)

Ohio

E. W. Mendenhall (October 15): The chrysanthemum plants under glass at Briggsdale are very badly infested.

CITRUS MEALYBUG (Pseudococcus citri Risso)

Qio E. W. Mendenhall (October 15): The chrysanthemum plants in a greenhouse at Briggsdale are very badly infested.

CREPE MYRTLE

CREPE MYRTLE APHID (Myzocallis kahawaloukalani Kirkaldy)

Alabama J. M. Robinsor (October 21): Moderately abundant on crepe myrtle at Auburn.

NARCISSUS

LESSER BULB FLY (Eumerus strigatus Fallen)

Qio E. W. Mendenhall (October 12): Narcissus bulbs of the harvest inspection are infested in Montgomery and Miami Counties.

BULB MITE (Rhizoglyphus hyacinthi Banks)

Qio E. W. Mendenhall (October 2): Quite bad on narcissus bulbs at harvest inspection in Montgomery and Miami Counties.

H O U S E H O L D I N S E C T S

TERMITES (Halotermes sp.)

California T. E. Snyder (October 30): A telegram from H. J. Ryan. "County constructing a \$20,000 insectary building. Foundation in and part of floor fabrication completed. Flight of Kalo-termes infests new lumber in stacks. Contractor discontinued work pending recommendations."



U.S. DEPT. OF AGRICULTURE
BUREAU OF ENTOMOLOGY

THE INSECT PEST SURVEY BULLETIN

A periodical review of entomological conditions throughout the United States
issued on the first of each month from March to December, inclusive.

Volume 9

Summary for 1929

Number 10

BUREAU OF ENTOMOLOGY
UNITED STATES
DEPARTMENT OF AGRICULTURE
AND
THE STATE ENTOMOLOGICAL
AGENCIES COOPERATING



INSECT PEST SURVEY BULLETIN

Vol. 9

Summary for 1929

No.10

INTRODUCTION

The year 1929 was characterized over most of the country by unusual cold in late winter; warm weather in early spring, and cool later; a summer nearly normal in temperature, and dry in the later part; and a fall in which drought was relieved in most, but not all, of the country, and in which severe cold waves came unusually early.

January and February were below normal in temperature except in the Atlantic States, and approached low records in the North Central and Mountain States. January snowfall was heavy in the North, whereas February rainfall was excessive in the Southeast and deficient in the Mountain States.

March and early April were above normal in temperature except in some western areas. In March the weather was generally more than normally warm, and in the Gulf region there were disastrous excesses in temperature. May was below normal in temperature except in the Far West, with uneven rainfall, which was especially deficient in California and Nevada, and excessive in the Cotton Belt and the Central States.

June was somewhat cooler than usual in the Southwest and in a few small areas. July was nearly normal in temperature, and August was slightly below normal in the East and above normal in the West. In June the rainfall was excessive in the lower Missouri Valley and deficient in the spring-wheat region of Texas. In late July and in August rainfall was deficient over much of the country.

In September the northern Great Plains were especially cool and temperatures were lower than usual except in the Northeast and Southwest, where heat was excessive in many places early in the month. The drought was relieved in September and October in most of the eastern and central areas, and rains were excessive in the Southeast. A hurricane passed over the Gulf Coast late in September. The most marked feature of late fall was the persistence of dry weather in the Pacific Northwest. In the cold waves the temperature was around zero in the North Central States and reached freezing along the Gulf coast and in northern Florida.

MEDITERRANEAN FRUIT FLY

The entomological feature of most general concern for the past season was the discovery of the Mediterranean fruit fly (Ceratitis capitata Wied.) well established in a district of considerable size in central Florida. On April 6 the first specimens were discovered at Orlando and by May 1 it has been found in the six counties contiguous to Orange County. By June 1 the insect had been found from Putnam County on the north to Brevard, Osceola, and Polk Counties on the south, and from the Atlantic coast westward to Sumter County. During May and June infested Florida fruits which had been shipped from that State before the Federal quarantine was issued on April 26 were found, in several eastern cities from Georgia northward to New York and across the Gulf Coast to Texas. In June a number of additional lightly infested points in Florida were discovered extending the known infested district northward to St. Johns County and westward to the Gulf near Tampa. During July but little additional territory was found to be infested, and no infested Florida fruit was reported during this month from outside of the State. During August only eight properties were found infested, and between August 27 and the end of the year but one infested fruit was found throughout the entire known previously infested district. The very remarkable eradication campaign has been very amply treated in other publications.

GRASSHOPPERS

During June rather intense infestations of grasshoppers (Acrididae) occurred in central Nebraska and in the Gulf States, and the eastern lubber grasshopper (Romalea microptera Beauv.) was doing considerable damage in scattered localities. As the season advanced, limited outbreaks developed in southern North Dakota and parts of South Dakota, and small outbreaks over a wide district in central Texas were reported. During the late summer these insects became quite generally destructive over the greater part of the East Central, West Central, and North Central States and inflicted rather heavy damage in scattered localities throughout the region of the Rocky Mountains and the Great Basin. By the end of the season outbreaks had developed in the Great Plains area of North Dakota and Montana, producing a rather serious prospect for next year.

WHITE GRUBS

The situation regarding white grubs (Phyllophaga spp.) was as a whole, very favorable, little damage being reported from any section of the country. Defoliation by the beetles in practically all of the upper Mississippi Valley, North Central, and East Central States indicates the possibility of a more serious situation next year.

WIREWORMS

Wireworms (Elateridae) attracted considerable attention throughout practically the entire United States, several species being involved in different parts of the country. Heteroderes laurentii Guer. was more numerous in southern Alabama than at any time during the last few years. Serious depredations by several species of Phelates were reported from Idaho, Washington, and California. In one place in Idaho these insects occasioned a loss of \$125 per acre on potatoes owing to the lowering of the grade of the crop. As the season advanced serious depredations by species of Agriotes and Melanotus were reported from the New England, Middle Atlantic, East Central, and West Central States. In the South Atlantic States, especially in South Carolina, Horistonotus uhleri Horn was very destructive.

PLAINS FALSE WIREWORM

The plains false wireworm (Eleodes opaca Say) did very little damage throughout its entire range this season.

CUTWORMS

During January and February cutworms (Noctuidae) occasioned considerable trouble in the trucking districts of Texas and Alabama. As the spring advanced trouble was reported quite generally over the country, but no abnormal developments were reported until June, when a large area extending over southeastern South Dakota, southwestern Minnesota, and northeastern Iowa was reported as experiencing very serious depredations.

ALFALFA WEEVIL

During the past season the alfalfa weevil (Phytonomus posticus Gyll.) has been discovered in Alpine County, Calif., this being an extension of the area previously known to be infested in the Carson Valley in Nevada. The infestation reported last year in Lassen County, Calif., is known to have extended its area about 1 mile. This insect was found for the first time in western Oregon at Medford, Jackson County. This is presumably a commercial jump, as the nearest known infestation is some 200 miles distant. A survey indicated that this infestation in Oregon extended to Central Point on the north and to Phoenix on the south and about 2 miles to the west of Medford and 2-1/2 miles east of that city. Grand County, Utah, was also found to be infested this year. The report last year of an infestation in Scott's Bluff County, Nebr.,* should have been Sioux County, the field being over the county line. There has been practically no economic damage in any part of the infested area this year. The reports of greatest abundance were from Millard County, Utah, and Moffat County, Colorado. (Cereal and Forage Insect Investigations U.S.D.A.)

*This refers to the finding of a single larva.

FALL ARMYWORM

During May the fall armyworm (Laphygma frugiperda S. & A.) was quite generally reported over the Gulf region from Florida and Georgia westward to Louisiana. Later in the season it developed that much of the damage attributed to this insect was really occasioned by the velvet-bean caterpillar. Thousands of acres of crops, however, especially on over-flowed lands, were damaged by the fall armyworm.

VELVET-BEAN CATERPILLAR

About the middle of August the velvet-bean caterpillar (Anticarsia gemmatilis Hbn.) was appearing in destructive numbers in northern Florida. By the middle of September it had appeared in greater numbers than ever before in the southern half of Mississippi, Louisiana, and eastern Texas. Stripping of soy beans was quite general; cowpeas were only slightly attacked; but velvet beans, even when grown near severe infestations, were apparently uninjured. Stands of as much as 100 acres of soy beans were completely defoliated.

HESSIAN FLY

During the late fall and winter months of 1928 there were indications of moderate damage by the Hessian fly (Phytophaga destructor Say) in Illinois, southern Indiana, middle Kentucky, middle Tennessee, central Pennsylvania, and also in northeastern Oklahoma and southwestern and east-central Missouri. In the Kansas wheat belt infestations were lower than they had been for several years. As the season advanced it became evident that this insect was very abundant in southern Indiana, central and southern Illinois, and central, south central, and southeastern Kansas. After the crop was harvested, damage was found to be generally light throughout the entire wheat belt, with the exception of southern Illinois, southern Indiana, and two comparatively small districts in central Kansas. There was a distinct hazard to the early-sown grain in these districts, although parasitism of the fly in the stubble was heavy in the east-central States. Threatening conditions prevailed also in northern Kentucky and southern Tennessee. When the stubble surveys were made after harvest, it was found that in Ohio the infestations had dropped from 13.5 per cent in 1928 to 3.4 per cent in 1929. The fly is comparatively scarce in the fall-sown wheat of southern Michigan, northern and central Ohio, and northern, central, and southeastern Indiana, and there is little danger of severe infestation of the crop now on the ground. In southwestern Ohio, southwestern Indiana, southern and central Illinois, central Kentucky, and central Tennessee heavy infestation developed in early-sown fields. Considerable infestation in volunteer, and early-sown wheat is also reported from southeastern Nebraska, central and southeastern Kansas, and southwestern and east-central Missouri. Throughout the East Central States emergence was decidedly in advance of the recommended safe-sowing dates, and seeding was generally delayed by drought. These factors materially relieved the threat of infestation

which was menacing some areas late in the summer, and there is less likelihood now of serious injury than there was at this time last year. The only parts where conditions appear at all serious are southern and western Illinois, southwestern Indiana, all of Missouri, central Kentucky, central Tennessee, and possibly also central and eastern Kansas and southeastern Nebraska.

WHEAT STRAW WORM

The wheat straw worm (Harmolita grandis Riley) occurred in rather devastating numbers in central and western Kansas this year. Adults of the second brood began to emerge late in May; and by the end of June a general outbreak was under way, in many cases 50 per cent of the stems being infested. It was estimated that the Kansas wheat crop of 1929 suffered a loss of from 10,000,000 to 15,000,000 bushels due to the combined depredations of this insect and the Hessian fly.

CHINCH BUG

Infestations of the chinch bug (Blissus leucopterus Say) continued at a very low ebb throughout the year. No reports were received of any considerable infestations throughout the known chinch-bug belt. This insect was reported from Lenawee County on the southern border of Michigan this year. It is only at intervals of many years that this insect occurs in Michigan in injurious numbers. It put in a rather unusual appearance in Hartford, Conn., where it was damaging lawn grass.

GREEN BUG

From the middle of September throughout the remainder of the fall there were rather heavy infestations of the green bug (Toxoptera graminum Rond.) in Georgia and North Carolina. Deadened areas were appearing in the grain fields by the middle of November. Late in November this insect was reported as seriously damaging early-sown winter barley in Butler County and early-sown wheat in Meigs County, Ohio. For the country as a whole, there was no general infestation.

STALK BORER

The stalk borer (Papaipema nebris nitela Guen.) was abnormally abundant throughout the New England, Middle Atlantic, East Central, and West Central States and, though apparently more troublesome than last year, it did not do so much damage as in 1927.

CORN EAR WORM

During the last week in April the corn ear worm (Heliothis obsoleta Fab.) was reported as unusually abundant in east-central Texas, and by

the first week in May it was being quite generally reported throughout the Gulf section. Damage by the first-brood worms from Kansas to Delaware was reported by the last week in June, and rather serious damage was being reported from the Gulf section to Arizona. By the middle of July damage was being reported from the New England, Middle Atlantic, and East Central States. In the East Central States the damage was about as severe as in 1927. In 1928 but little trouble was experienced as compared with normal conditions. By the last week in August the fourth generation of larvae was appearing in the fields in Texas, and before the end of the season damage was quite generally reported in the Mississippi Valley and the Great Plains as far north as sweet corn is grown.

EUROPEAN CORN BORER

In the region of the Great Lakes, where the infestation is of major interest to the corn belt, 255 townships outside of the previously quarantined areas have been found this year infested by the European corn borer (Pyrausta nubilalis Hbn.). Of these, three were in Pennsylvania 10 in West Virginia, 137 in Ohio, and 105 in Indiana. In Michigan 59 townships outside of the previously known infested area were found to have been invaded. The borer has been found farthest west in Boone Township, Porter County, Indiana, and farthest south in Ohio Township, on the Ohio River, Gallia County, Ohio. The spread has in general had a southward trend for the season and in extent can be considered normal. This spread is the result of a natural flight of the moths and, of course, can not be prevented. The entire area known to be infested includes the southern portion of Quebec and Ontario, as well as certain localities in New Brunswick and Nova Scotia, in Canada; the southern two-thirds of New England; three localities in northern New Jersey; all of New York; three-fourths of Pennsylvania and Ohio; the Panhandle of West Virginia; nearly all of the agricultural portion of Michigan; and the northeastern fourth of Indiana. For the Great Lakes area, taken as a whole, the past season can be considered, in general, unfavorable to the corn borer. As a result, there was only a slight increase in average abundance for the entire area. In Michigan there was an actual decrease. Somewhat roughly speaking, the situation is considered like that of 1926 - the year immediately preceding the big clean-up campaign of the spring of 1927. Given a favorable season, there are enough corn borers present in the worst infested sections to cause possible trouble in 1930, unless adequate control measures are practiced. This is particularly true of that portion of northwestern Ohio lying in the Maumee Valley; this section will be watched with interest during the season of 1930. Damage resulting from direct injury by the borer was not observed during the past season in New York, Pennsylvania, West Virginia, or Indiana. The infestations in West Virginia and Indiana are so recent that no damage was to be expected. In Ohio and Michigan losses in yield, estimated at from 10 to 30 per cent, were observed in a few fields, and fields showing traces of injury were observed in greater numbers than ever before, especially in northwestern Ohio. Beets grown in eastern Massachusetts arrived on the Boston market rather badly infested and borers were also found in cut gladiolus flowers. Slight infestation was reported in New England-grown

beans. The infestation in the New England market-garden areas was most pronounced in the vicinity of Woburn, Arlington, Winchester, Dighton, and Somerset, Mass., and Newport and Bristol Counties, Rhode Island. (Division of Cereal and Forage Insect Investigations, Bureau of Entomology, U.S.D.A.)

Chilo simplex Butl.

Chilo simplex Butl. has been less destructive than formerly in Hawaii owing to the introduction and spread of natural enemies. The first crop of rice showed nearly normal yields, but the second was not so good.

JAPANESE BEETLE

The section generally infested by the Japanese beetle (Popillia japonica Newm.) was extended in 1929 principally on the north and south. The section longest occupied, including Riverton and Moorestown, N. J., was much less heavily infested than in 1927 and 1928. The heaviest infestation in New Jersey occurred in the cities of Trenton and Bordentown and in the townships of Florence, Springfield, and Mansfield on the north; Monroe, Glassboro, Clayton, Harrison, Mantua, Washington, Gloucester, Winslow, East Greenwich, and West Deptford on the south. In Pennsylvania the area of heaviest infestation is more uniform and extends as a band from 2 to 5 miles wide surrounding the city of Philadelphia starting at a point on the Delaware River between Bristol, Pa., and Trenton, N. J., and swinging westward around the city almost to the Delaware River again in Darby Township. The area of well established infestation is now bounded by a line drawn from Point Pleasant on the New Jersey coast northwestward through the city of New Brunswick, and westerly to the Delaware River at a point slightly north of Lambertville; in Pennsylvania the line extends southwesterly through the townships of Plumstead, Hatfield, Skippack, Upper Providence, Charlestown, Edgemont, Concord, and Bethel; in Delaware the line extends through the township of Brandywine and the city of Wilmington and crosses the Delaware River at New Castle. The line then crosses the southern portion of New Jersey in almost a direct line to Ocean City on the coast. The damage in 1929 in the most heavily infested areas was about the same in degree as the damage in similar areas in 1928. The most striking feature of the year has been the continued reduction of the beetle population in the central portion of the infested area. Extensive control campaigns, either as spraying operations against the adult beetles or in the application of soil treatment to destroy the grubs, have been conducted successfully in many communities. Many additional colonies of imported parasites have been released by the Bureau of Entomology and the outlook for the natural control of the insect is even more hopeful than it has been in the past. (Prepared by Japanese Beetle Laboratory, Bureau of Entomology, U.S.D.A.)

ASIATIC GARDEN BEETLE

The Asiatic garden beetle (Aserica castanea Arrow) has been discovered at the following points outside of the area previously regulated under the Federal quarantine: Cromwell, Manchester, Mansfield, New Canaan, New London, and Southport, Conn.; Amawalk, Fishkill, and Kingston, N. Y.; Milford, and Winterthur, Del. In most cases but few specimens were found.

ASIATIC BEETLE

The Asiatic beetle (Anomala orientalis Waterh.) was found at only the following two points outside of the area regulated under Federal quarantine: Seven larvae were found at Bridgeport, Conn., and two at Schenectady, N. Y. According to O. H. Swezey, this insect has spread a little farther from the limited district it formerly occupied on the island of Oahu, Hawaii. It is not numerous enough to be causing any damage, as it is fully controlled by the Philippine wasp Scolia manilae.

APHIDS

Orchard aphids hatched unusually early in the New England States and appeared at that time to be abnormally abundant in the New England, Middle Atlantic, and East Central States. As the season advanced, the situation in New England improved markedly. On the other hand, in New York State and southward to South Carolina and westward to Ohio the aphids did very considerable damage, and in Oregon the apple aphid (Aphis pomi DeG.) was extremely abundant as was also the rosy apple aphid (Anuraphis roseus Baker). By the middle of June the rosy apple aphid had increased in the Middle Atlantic States to more serious numbers than in many years.

CODLING MOTH

The earliest emergence of the codling moth (Carpocapsa pomonella L.) was reported from Georgia on April 4. The earliest emergence in South Carolina was April 8. By April 18 moths were observed emerging in Virginia, by April 19 in southern Illinois, by May 12 in east-central Illinois, by May 24 in Ohio, by May 10 in Washington State, east of the Cascade Mountains, and by May 15 in Oregon west of the Cascades. During June the insect appeared to occur in about normal numbers over the greater part of the eastern apple-growing region although there was an area in central and western Illinois where it was unusually abundant. As the season advanced, the East Central States reported very considerable injury by the second-brood larvae. A partial third brood in conjunction with the very short crop made side-worm injury very conspicuous at harvest over the Middle Atlantic and East Central States. Unusually warm weather during the first three weeks in September resulted in considerable activity of the worms on the comparatively light crop in Washington and Oregon, where infestations were heavier than in 1928.

ORIENTAL FRUIT WORM

In the Fort Valley district of Georgia the first twig injury by the oriental fruit worm (Laspeyresia molesta Duscck) was observed on April 4, three weeks earlier than the first injury in 1928. In 1928 the first twig injury was observed on April 25, in 1927 on April 1, in 1926 on April 20, and in 1925 on April 10. Only once in the last five years has this insect emerged as early as in 1929. Adult moths were observed in southern Indiana on April 3 and in southern Illinois April 5. By the middle of June serious injury had been reported along the Atlantic seaboard from Connecticut to North Carolina and slight damage in Georgia. In the East Central States the infestation, although heavy, was not much above normal. By the middle of July damage was being reported from the New England, the Middle Atlantic, the northern South Atlantic, the East Central, and the Lower Mississippi Valley States. Late in the summer severe injury was observed in southeastern Connecticut, the lower Hudson River Valley, and the extreme western part of New York State. The insect was doing very unusual damage throughout the Middle Atlantic States and southward to South Carolina, especially in the upper Piedmont district, as well as in northern Georgia. In New Jersey and Pennsylvania fruit counts indicated that the infestation ran about 50 per cent while in southern Illinois it was from 20 to 25 per cent. This insect was recorded for the first time in Massachusetts at Amherst and other points in Hampden County.

SAN JOSE SCALE

The San Jose scale (Aspidiotus perniciosus Comst.) is apparently on one of its upward trends in the East Central States. Over the New England and Middle Atlantic States it is still comparatively scarce, whereas in the South Atlantic States it seems to be increasing. In the lower Mississippi Valley it was reported as very abundant as was also the case in the upper Great Basin. The severe winter of 1928-29 in Wisconsin appears to have checked this insect, as it was found in only seven of the southern counties this year. In the Arkansas-Kansas fruit district the insect appears to be but moderately abundant.

EASTERN TENT CATERPILLAR

The eastern tent caterpillar (Malacosoma americana Fab.) was decidedly below normal in numbers in the New England and Middle Atlantic States whereas from Virginia southward it was more abundant than in the past five or six years. In parts of this region practically every wild cherry, crab, and neglected apple tree was defoliated by the end of May. West of this region this insect attracted but little attention this year.

PLUM CURCULIO

In the South Atlantic States the season was rather early and the winter had been unusually mild. The first adults of the plum curculio (Conotrachelus nenuphar Hbst.) were observed on trees in Georgia during the last week in March and in southern Illinois during the first week in April. It will be recalled that a very large number of weevils entered hibernation last fall in this section. As the season advanced reports of unusual abundance came from the Atlantic seaboard as far up as New England, and from westward well into the East Central States. By the middle of April it was estimated that the infestation in Georgia was the heaviest since 1921. By that time peach drops were showing a 50 per cent infestation. In the West Central States the insect was reported as but moderately abundant, but in the lower Mississippi Valley the serious conditions of the South Atlantic States were duplicated. By the end of June an unprecedented outbreak had developed in the lower Hudson River Valley in New York State, and the heaviest infestation since 1921 was occurring in Delaware and North Carolina. Throughout June reports of unprecedented numbers were received from practically the entire Atlantic seaboard from Maine to Georgia. West of the Alleghenys in the East Central States infestations were normal or below.

PEACH BORER

With the exception of scattered localities in Mississippi, Georgia, and North Carolina, wherever the paradichlorobenzene method was either not adopted or incorrectly carried out, the peach borer (Agoria exitiosa Say) occasioned unusual damage. Late in the season, particularly in the Georgia peach belt, infestations were much heavier than usual.

EUROPEAN RED MITE

Early observations of eggs throughout the Middle Atlantic States indicated that the European red mite (Paratetranychus pilosus Can. & Fanz.) would be at least normally abundant. Although first discovered in Maine in 1927, eggs were extremely abundant in that State this spring. As the season advanced, however, no unusually heavy infestations were reported, and as a whole the year may be said to have been one of subnormal abundance.

MEXICAN FRUIT WORM

That the Mexican fruit worm (Anastrepha ludens Loew) had regained foothold in the lower Rio Grande Valley of Texas was determined in April by the finding of infestations in two local packing houses in which a small quantity of fruit had been stored at the close of the period permitted for the harvesting of the citrus crop. Previous to such reappearance almost two years had elapsed (from June, 1927, to April, 1929) during which no specimens of the pest had been found in the

area. An intensive reexamination disclosed that the premises of 10 growers in Hidalgo County were involved in this reinvasion. (Plant Quarantine and Control Administration.)

CITROPHILUS MEALYBUG

The parasite Coccophagus gurneyi Compere of the citrophilus mealybug (Pseudococcus gahani Green) has now been proved sufficiently adaptable to California conditions to make possible its propagation and distribution commercially for the control of the pest. During the past season 172,000 parasites were liberated over a wide area for establishment purposes only. Potatoes represent an extensive item in insectary operations for the propagation of the lady beetle Cryptolacmus montrouzieri Muls., used to fight the mealybug in Los Angeles County, Calif. Approximately 2,000 sacks of high-grade potatoes will be required in the operation of the laboratories at Downey and Rivera during the coming season. The potatoes are used in developing sprouts on which the mealybug is grown as food for the lady beetles. This quantity of material should easily produce the 10,000,000 beetles estimated as required to meet the field need next season. Production will start in March and reach a peak during April, May, and June. At present the mealybug situation in the field looks more satisfactory from the standpoint of control than it has for several seasons.

RASPBERRY FRUIT WORM

The raspberry fruit worm, (Byturus unicolor Say), which has been so injurious to loganberries in Washington State, seemed more prevalent than last year and was observed this year destroying strawberries and causing injury to the petioles of apple and cherry. This insect also caused very considerable damage to red raspberries in the lower Hudson River Valley of New York State and attracted considerable attention in Minnesota, Wisconsin, and southwestern Michigan.

PEA APHID

Late in March the pea aphid (Illinoia pisi Kalt.) was reported as doing rather severe damage in many localities in Florida. This insect was very abundant in Virginia throughout the winter on alfalfa and increased very rapidly during the spring, causing considerable damage. In the Pacific Northwest it was so scarce that specimens were difficult to find in vetch where it usually has been quite abundant. Continued cool, rainy weather in April retarded the development of this insect in the big cannery district of Wisconsin. During the remainder of the season no unusual conditions were reported.

COLORADO POTATO BEETLE

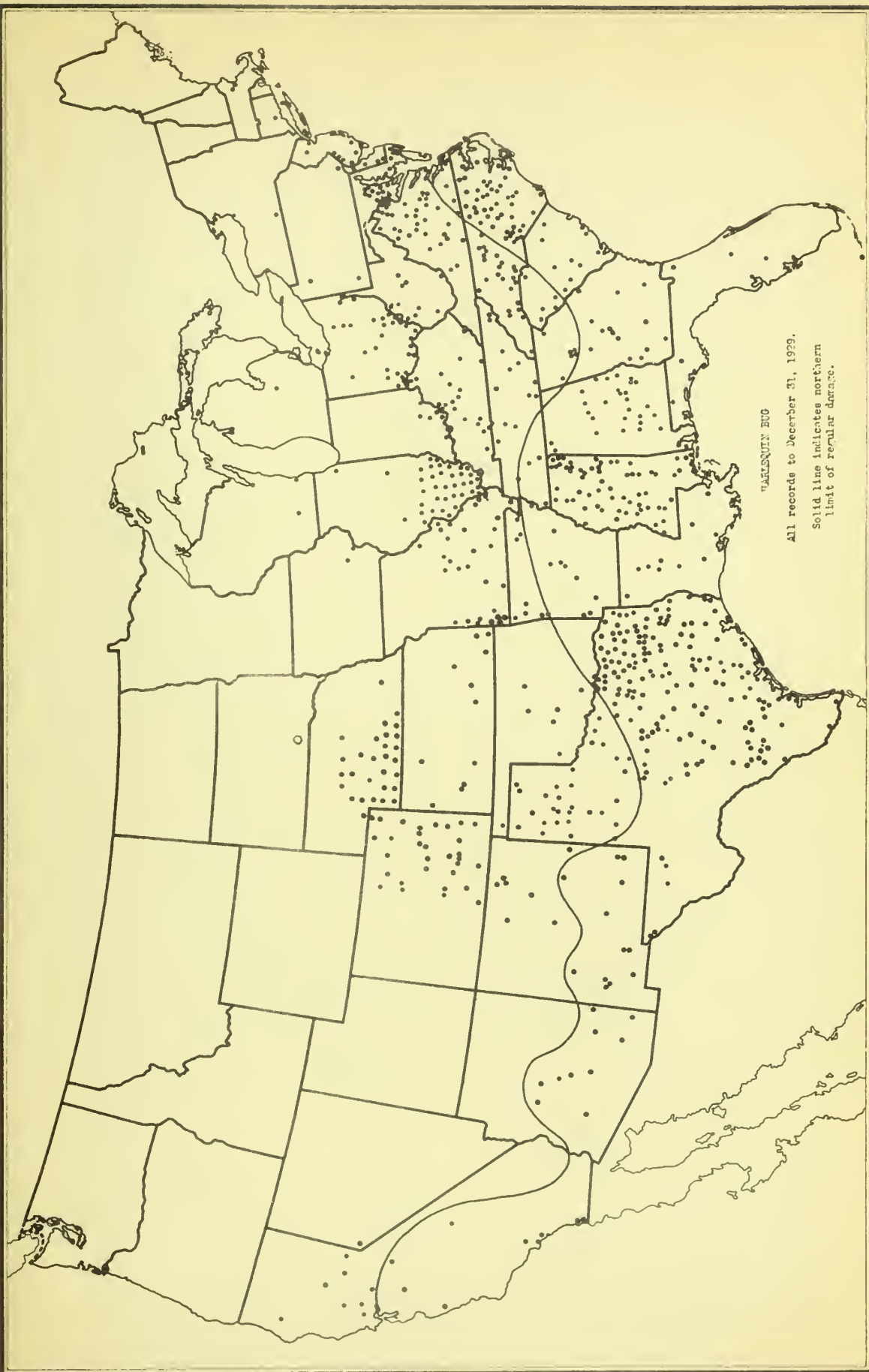
The first Colorado potato beetle (Leptinotarsa decemlineata Say) recorded from the field, was observed on March 25 in Mississippi. About the middle of April this insect became decidedly troublesome in the Norfolk section through its feeding on eggplant in cold frames. An adult was first seen in this section on April 4. By the middle of April eggs were hatching in the Carolinas. In Florida and the Gulf section during late March and early April this insect was quite troublesome in tomato plant beds. Late in May adults were unusually prevalent on Long Island, N. Y., and by this time were doing some damage in the big potato-growing district about Hastings, Fla. A rather unusual occurrence was reported from Michigan where the overwintering adults were said to have been attacking the young shoots of asparagus. As the season advanced, this insect became so prevalent in Suffolk County, N. Y., that the usual sprayings were not sufficient to control the outbreak. This unusual abundance extended into Pennsylvania and parts of Ohio, Minnesota, and Wisconsin. Owing to the very effective control of the beetle by insecticides it is very difficult to ascertain its status over any considerable territory.

HARLEQUIN BUG

During the late winter months the Harlequin bug (Murgantia histrionica Hahn) did considerable damage in the Gulf Coast trucking districts to a wide variety of cruciferous plants. Late in March this insect was reported as seriously damaging cabbage, peas, and beans in Delaware; early in April it was reported from Eastern Maryland, and by the middle of April was seriously abundant in certain coastal plains sections of Virginia, North Carolina, and South Carolina. Towards the end of April reports of severe damage were received from all parts of Mississippi, Louisiana, Alabama, and northeastern Texas.

MEXICAN BEAN BEETLE

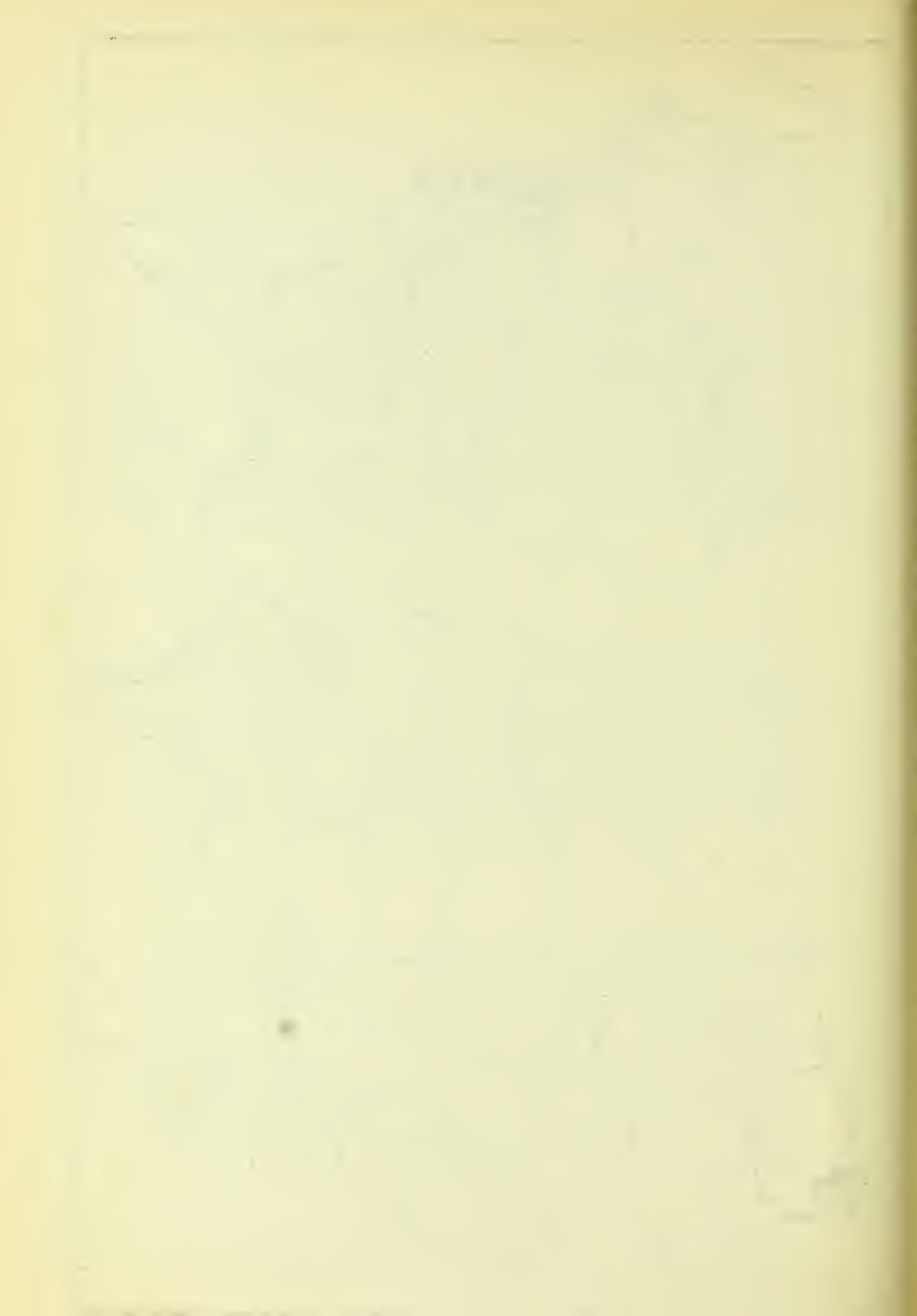
The winter survival of the Mexican bean beetle (Epilachna corrupta Muls.) in the Southern States was the highest in 1929 of any year on record. At the Arlington, Va., Farm 62.4 per cent of 1,800 beetles placed in the hibernation cage emerged in the Spring. This is more than twice as high as the record for any of the last eight years in Alabama. Reports from the Southern States indicate that the beetle was generally very numerous, especially in Alabama, Kentucky, the Carolinas, Virginia, and Maryland, and that much damage was done to the bean crop. In Ohio the percentage of survival was 2.88 per cent at Athens and 1.76 per cent at Columbus, both figures being higher than in 1928, the highest for the last five years for Columbus, and higher than any year for the last four years at Athens, with the exception of 1927, when 4 per cent survived the winter. On the Eastern Shore of Maryland the spring infestation was heavy, but droughts during the summer prevented a great increase in population. In some localities, however, control practices were necessary throughout

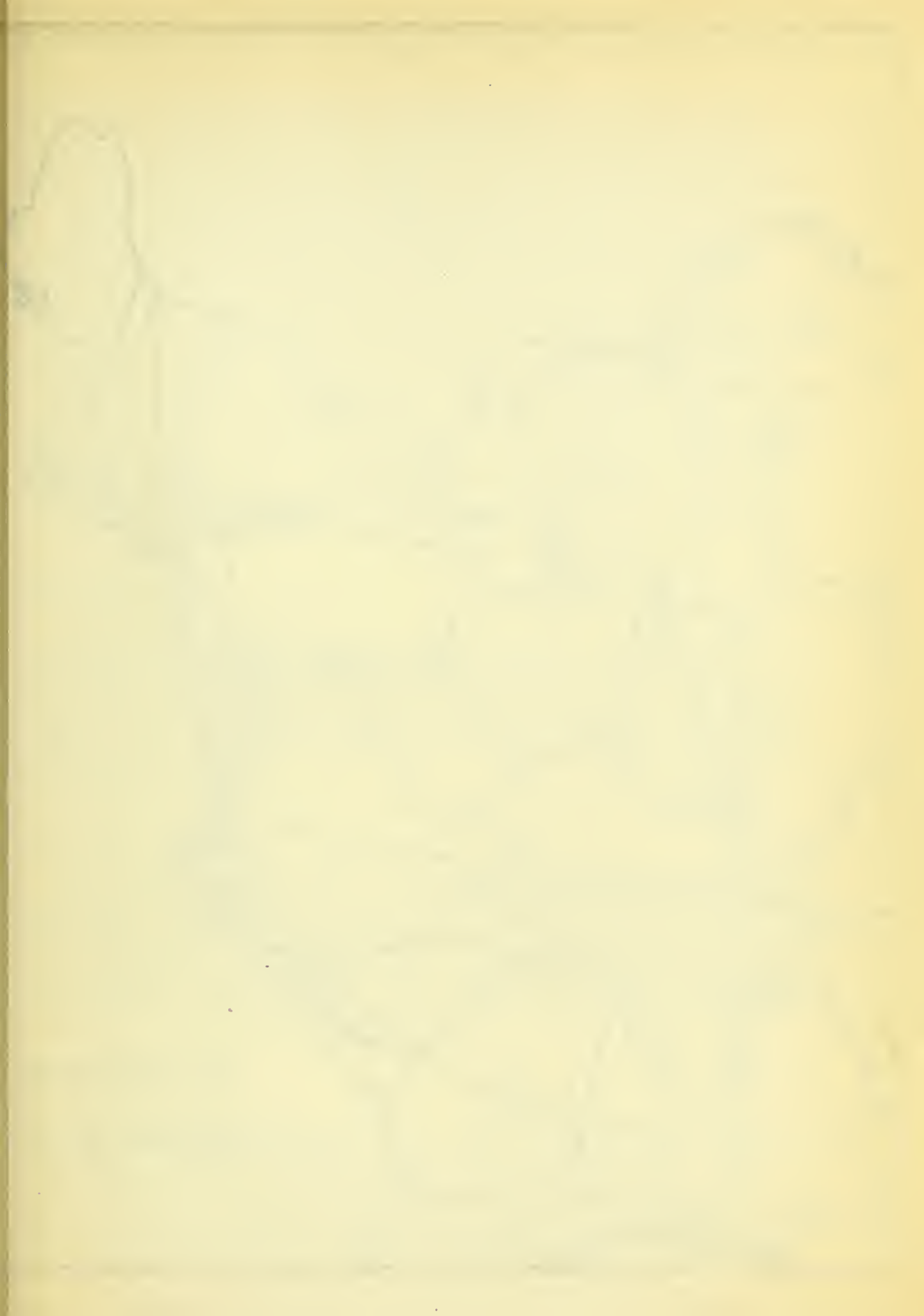


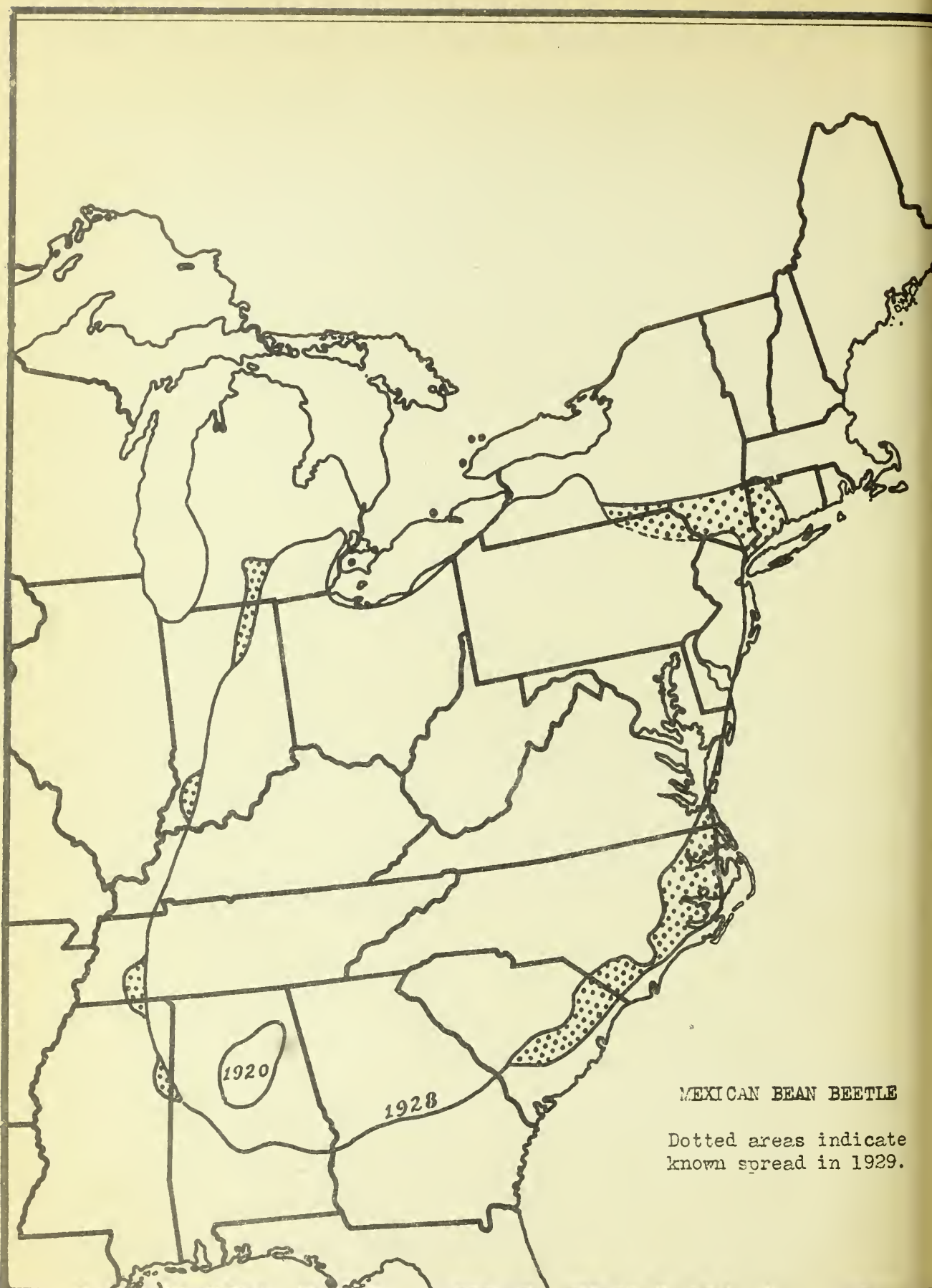
"ARLEQUIN" BUG

All records to December 31, 1929.

Solid line indicates northern
limit of regular damage.







MEXICAN BEAN BEETLE

Dotted areas indicate
known spread in 1929.

the season. The same was true in southern Ohio; about Athens the population decreased in summer and late fall to the lowest point on record, but along the Ohio River heavy fall infestations were not uncommon. In Kentucky and in some southern Ohio counties infestations were reported to be unusually heavy.

Since northern and eastern limits had apparently been approached in 1928, relatively little new territory was available. The chief spread occurred in New York, Connecticut, and just into the southwestern edge of Massachusetts, and in the Carolinas. In North Carolina practically the whole State is now covered, and in South Carolina only a few counties in the southern portion are free from the beetle. Slight spread to the west occurred in Michigan, Indiana, Tennessee, and Mississippi, and probably in Kentucky, though no new records were received from the latter State. It appears that survival in New York State and Michigan is very low, except possibly about Chautauqua Lake in New York. No infestations of sufficient proportions to cause commercial losses were found in the sections of either State where beans are extensively grown. In Canada only one new record (at Guelph) was obtained. Dominion entomologists have found that the insect, in some instances, failed to survive the winter.

SEED CORN MAGGOT

Late-planted beans in rather large acreages were destroyed by the seed-corn maggot (Hylemyia cilicrura Rond.) in the Norfolk district of Virginia; and although scattered reports of slight damage were received throughout the spring months from various parts of the country and of rather serious infestations in western New York, east-central Iowa, and central California, the year as a whole was not one of unusual injuries.

SWEET-POTATO WEEVIL

The situation with regard to the sweet-potato weevil (Cylas formicarius Fab.) is practically the same as last year in Mississippi and Alabama. During the year actual loss to the sweet-potato crop has been negligible. The percentage of injury on farms where the insect has been found was very slight and the area of infestation has not increased. The weevil was found this year on a total of 58 farms in the five counties known to be infested.

BEET LEAFHOPPER

Severe winter conditions produced a high mortality of the beet leafhopper (Eutettix tenellus Baker) in southern Idaho where the insect was unusually scarce in the spring. This condition extended into northern Utah and eastern Oregon. The leafhopper was observed for the first time in the Willamette Valley section of Oregon in 1926. Late in the season reports of large populations in the desert breeding grounds were received from Idaho and Utah.

VEGETABLE WEEVIL

The vegetable weevil (Listroderes obliquus Gyll.) has continued to spread. It has been found during the year in 28 new counties in four States, as follows: Mississippi 10, Alabama 12, Louisiana 5, and Florida 1. This brings the total known distribution in these four States to 85 counties; Mississippi 50, Alabama 19, Louisiana 13, and Florida 3. The infestation on the east includes Coffee County in Alabama; on the north, Monroe County in Mississippi and Fayette County in Alabama; and on the west, West Baton Rouge and West Feliciana Parishes in Louisiana. In some sections the weevil has been less plentiful than last year, while in others it has been more numerous and the injury to crops more serious. Its favored food plants continue to be turnip, carrot, cabbage, spinach, and related crops.

SUGARCANE BORER

Reports from Louisiana late in February indicated that the numbers of the sugarcane borer (Diatraea saccharalis Fab.) then in hibernation were unusually small. By the end of August the third generation was developing in the cane but not in very large numbers. The egg-parasite Trichogramma minutum Riley was destroying about 50 per cent of the eggs at that time, and by the end of September it was destroying practically 95 per cent of the eggs in many localities. A superficial survey of the Gulf Coast section of Mississippi failed to locate the borer in the widely separated plantings in that State.

PERIODICAL CICADA

Brood III of the periodical cicada (Tibicina septendecim L.) appeared this year in the following places:

Iowa.

Adair, Appanoose, Boone, Clarke, Dallas, Davis, Decatur, Des Moines, Guthrie, Hamilton, Henry, Iowa, Jasper, Jefferson, Lee, Louisa, Lucas, Madison, Mahaska, Marion, Monroe, Poweshiek, Ringgold, Story, Tama, Union, Van Buren, Wapello, and Wayne Counties.

Illinois.

Adams, Brown, Cass, Fulton, Hancock, Henderson, Knox, Macon, Mason, McDonough, Menard, Montgomery, Morgan, Pike, Schuyler, Scott, Tazewell, and Warren Counties.

Missouri.

Boone, Cedar, Clark, Harrison, Holt, Mercer, Pike, Putnam, and Randolph Counties.

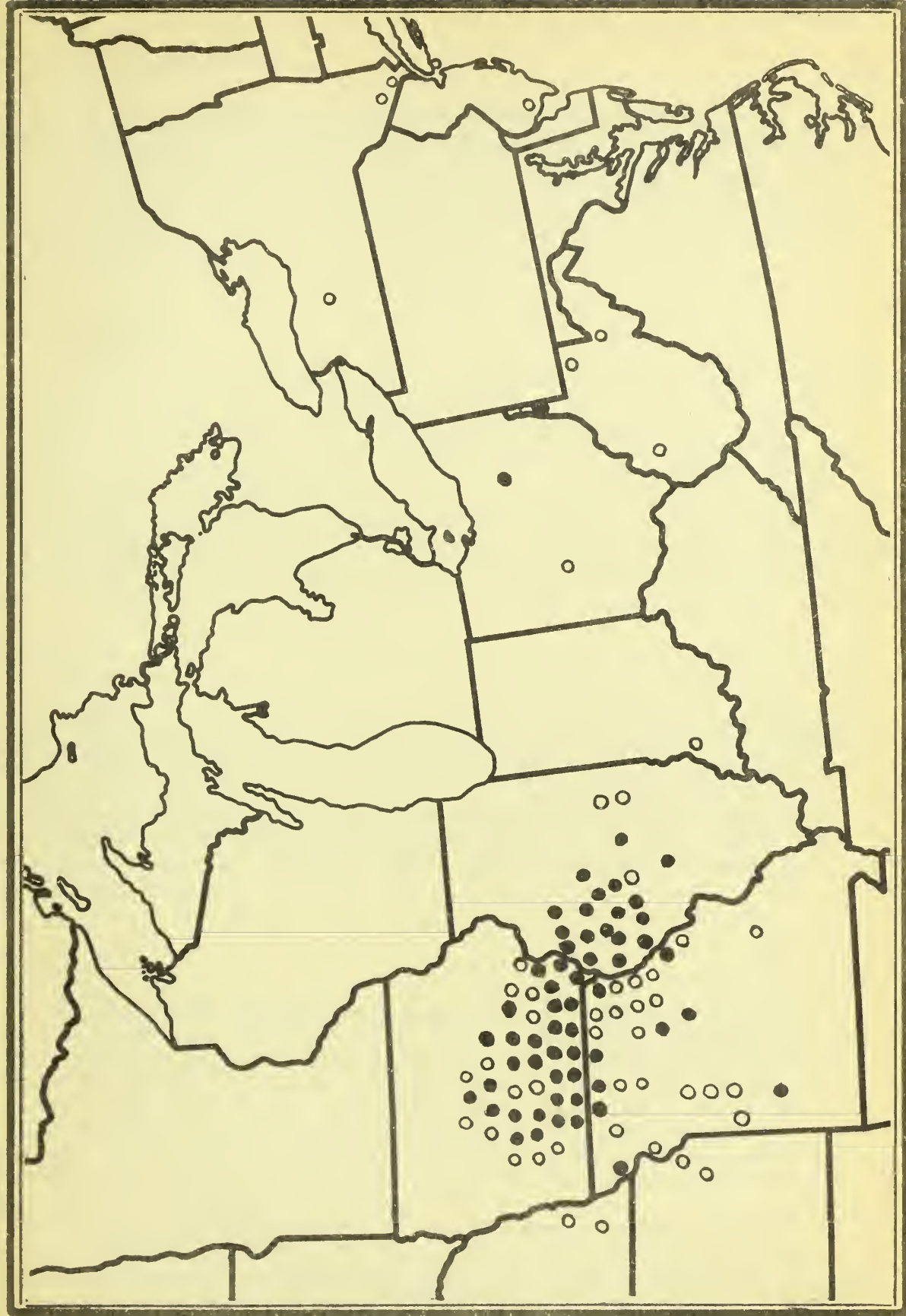
Ohio.

Wayne County.

West Virginia.

Ohio County.

Known distribution of Brood III up to and including its appearance in 1929.



Black dots indicate 1929 records.

WHITE-MARKED TUSSOCK MOTH

Early in the spring there were indications, from the number of egg masses, that the white-marked tussock moth (Hemerocampa leucostigma S. & A.) would be somewhat more abundant than usual in New England. Later in the season larvae were quite numerous in the Middle Atlantic States. The first brood developed to rather serious numbers in the East Central States, but this brood was heavily parasitised and the second brood was of minor importance.

FIR TUSSOCK MOTH

The fir tussock moth (Hemerocampa pseudotsugata McD.), which suddenly appeared about three years ago as a new defoliator, as far as our experience is concerned, continues to spread and appear in new areas, although in some of the first outbreaks reported a marked reduction due to parasitism and starvation is apparent. A forest ranger has advanced the theory that this caterpillar is locally transported by sheep and cattle passing through the infested areas. The female moth is wingless. The principal centers of infestation at the present time are at Jarbridge, Nev.; on the Weiser and Idaho National Forests, Idaho; and near Northport, Wash.

BAGWORM

During the winter and early spring the bags of the bagworm (Thyridopteryx ephemeraeformis Haw.) were quite numerous in the Middle Atlantic, East Central, and West Central States. Scattered reports were also received from the lower Mississippi Valley. As the season advanced, considerable damage was reported from many places in Mississippi and also from the Middle Atlantic States southward to South Carolina, and conditions in the East Central States westward to Kansas became increasingly serious.

GYPSY MOTH

"The gypsy moth (Porthetria dispar L.) extermination project in New Jersey has been continued by the New Jersey State Department of Agriculture and the Plant Quarantine and Control Administration of the Federal Government. The intensity and size of the original infestation have been greatly reduced. Since the start of this work over 2,000 square miles have been thoroughly examined and whenever necessary extermination treatments have been applied. At the present time less than 140 square miles remain to be intensively scouted and the annual expenditure is gradually decreasing.

"The gypsy moth situation in the barrier zone is not as gratifying as in New Jersey. The spread of this insect has been stopped since the establishment of the zone in 1923. As a result of the intensive work carried on by the New York State Conservation Department and the Federal

Government conditions within the zone improved each year until 1927. Since then, because of heavy infestations developing east of the zone, it has been more and more difficult to keep the zone clean and the number of infestations have been increasing in the southwest corner of Massachusetts and the northwest corner of Connecticut and in the adjacent territory to the west in New York State.

"Considering the area in New England as a whole, the gypsy moth has continued to increase each year since 1924 when 825 acres were reported defoliated. Since then the area defoliated has approximately doubled each year and during the past summer over 500,000 acres in New England were partially or completely defoliated. There was a large increase in New Hampshire and Maine; conditions were slightly better in Rhode Island, eastern Connecticut and the eastern part of Massachusetts but serious infestations continued to exist between the Connecticut River and the barrier zone and these are a constant source of reinfestation of the zone." (Plant Quarantine & Control Administration, U.S.D.A.)

BROWN-TAIL MOTH

"The records which have been obtained in regard to the brown-tail moth (Nygmia phaeorrhoea Donovan) indicate an increase in abundance in some sections in Massachusetts and in the Merrimac Valley in New Hampshire. It has not been abundant over most of the area." (Plant Quarantine & Control Administration, U.S.D.A.)

SATIN MOTH

"The satin moth (Stilpnotia salicis L.) was abundant over a larger area in New England than previously and caused severe defoliation and injury of poplar and willow in many towns. In several locations heavy infestations of this insect were found in woodland growth of poplar. This is the first time this has been observed in New England, only poplar and willow on estates and roadsides had previously been attacked. Since its discovery in this country near Boston in 1920, it has spread rapidly and is now beyond the brown-tail moth line in most places. In Maine it has spread nearly 50 miles in a northeasterly direction beyond the brown-tail moth quarantine line. In New Hampshire it is about 30 miles further west and in Massachusetts 40 to 50 miles beyond the brown-tail moth line. In Vermont, Massachusetts and Connecticut it is well established west of the Connecticut River. The entire State of Rhode Island is infested. This insect was not reported from outside the present quarantined area on the Pacific Coast, and as far as is known it does not extend south of Lewis County, Wash." (Plant Quarantine & Control Administration, U.S.D.A.)

ORIENTAL MOTH

"No special effort was made during 1929 by this Division to determine the exact area infested by this moth. The situation in regard to the

oriental moth (Cnidocampa flavescens Walk.) remains about the same. It is present in the towns and cities near Boston, occasionally causing severe defoliation of trees and shrubs in this area. It has spread slowly but there was no noticeable spread of this insect recorded during the season". (Plant Quarantine & Control Administration, U.S.D.A.)

TENT CATERPILLARS

The Great Basin tent caterpillar (Malacosoma fragilis Stretch) has been so numerous around Mt. Shasta, Calif., this year that trains on the Southern Pacific Railroad were detained by the worms on the rails, it being necessary to equip the engines with steam jets to clean the track in front of the wheels. In western Washington the forest tent caterpillar (M. disstria Hbn.) and the western tent caterpillar (M. pluvialis Dyar) were more numerous than they had been at any time during the last several years. Fruit trees, shrubbery, and shade trees were badly defoliated. In the city of Seattle these insects were so numerous that street cars were stopped by the insects on the rails.

SPRUCE BUDWORM

The spruce budworm (Harmologa fumiferana Clem.) was reported in scattered localities in Wisconsin, Minnesota, South Dakota, and North Dakota. The South Dakota outbreak was the second that has been observed in recent years in that State. An infestation of lodgepole pine, involving from 75 to 100 square miles in the southwestern portion of the Yellowstone National Park and the adjoining Targhee National Forest, continues unabated, although there is evidence that in areas which have been infested for three years there has been a marked diminution in the number of insects so that relatively few trees will be killed. The forest officers report reduction in the numbers of this insect on the Idaho and Payette National Forests where it has been especially destructive to fir for the last few years. The outbreak centering along the Shoshone Canyon and the eastern entrance to the Yellowstone National Park continues unabated. Apparently a considerable percentage of the fir in this canyon will be killed. Other outbreaks which have been reported from time to time in Yellowstone Park have almost completely subsided. Some local folding was found in the fir type of the Coeur d'Alene and Colville National Forests. This insect has continued active in the jack pine forests near Higgins Lake, Mich., and has done considerable damage, although no accurate estimates of abundance or injury are available.

TIP MOTH

The parasite Campoplex frustranae Cushman of the pine tip moth (Rhyacionia frustrana bushnelli Busck), which was introduced into the pine plantations at Halsey, Neb., in 1926, has shown remarkable increase in the last three years. The tip-moth infestation at points of parasite introduction has been reduced from 92 to 33 per cent during this period.

HEMLOCK BUDWORM

The hemlock budworm (Peronca variana Fern.) has defoliated western hemlock over an area of 150,000 acres on the Olympic peninsula of Washington. It is not thought that the trees will die unless heavy feeding on the needles is continued next year.

BARK BEETLES

Heavy broods of the southern pine beetle (Dendroctonus frontalis Zimm.) overwintered in the North Carolina forest areas, but they suddenly disappeared during the early spring after an excessive amount of rainfall. During the latter part of June and early July the excess precipitation was greatly reduced, and by the end of July the insect was noticed again in increasing numbers. In the Pisgah National Forest dying pines were reported particularly among the second-growth shortleaf pine trees. Similar reports were received from other South Atlantic States. Hymenopterous parasites were very abundant. During July an undetermined species of Dendroctonus was reported as damaging between 10 and 15 per cent of the longleaf pine trees on a 1,000-acre tract in Louisiana. The eastern spruce beetle (D. piccaperda Hopk.) has been reported from many districts in Maine and this may indicate an approaching outbreak. The mountain pine beetle (D. monticolae Hopk.) occasioned heavy losses of timber on the eastern fork of the Bitter Root drainage area in Montana. This is a continuation of the outbreak which has been under way for a number of years. Surveys of the area showed over 1,100,000 lodgepole pine trees infested, an increase of about 250 per cent over the number attacked in 1928. Outbreaks of this insect were also recorded in California, Oregon, Idaho, and Wyoming, involving the Bitter Root, Nez Perce, Salmon, and Beaverhead National Forests. A lesser outbreak in white pine was reported from Pend Oreille County, near Sullivan Lake, Wash. The Douglas-fir beetle (D. pseudotsugae Hopk.) is doing an increasing amount of damage in Pend Oreille County, and causing considerable timber loss. There is a marked decline ranging from 40 to 90 per cent, in the infestation of the western pine beetle (D. brevicornis Lec.) this year. This almost phenomenal decline is largely attributed to increased growth of the trees during the season of 1928, which was made possible by the reserve of moisture built up by the heavy precipitation during the spring of 1927. Only two outbreaks of the Black Hills beetle (D. ponderosae Hopk.) have been reported, one on the Colorado National Forest involving about 500 trees consisting of marginal groups around the main infestation which was put under control in the last two years. A few yellow pines were reported attacked on the Ashley National Forest. For the last two years the Forest Service has conducted control work on the Prescott National Forest against a vigorous outbreak of the southwestern pine beetle (D. barberi Hopk.). Preliminary reports indicate that the past season's work has materially checked this outbreak.

WHITE-PINE WEEVIL

Injury by the white-pine weevil (Pissodes strobi Peck) was more prevalent in 1929 over the entire northeastern area than for any past year, according to the records kept by the assistant entomologist stationed at the Northeastern Forest Experiment Station. It also appears that a greater number of trees were killed back more than two years than has previously been the case. As in previous years it was found that the greatest injury occurred in widely spaced pure stands. The increase in infestation in mixed stands, however, was scarcely noticeable.

FIR SCOLYTUS

The widespread killing of Abies concolor and A. magnifica by the fir scolytus (Scolytus ventralis Lec.) in the Sierra and Cascade Mountains in California and Oregon shows little tendency toward reduction. The recent outbreak first attracted attention in 1924.

TERMITES

Termite damage to the woodwork of buildings, service poles, etc., is becoming increasingly serious in the Southeastern, Gulf, Central, Western, Southwestern, and Pacific Coast areas of the United States. In the possessions of this country in the tropics, termite damage is also becoming much more of a problem. It has recently been reported that in addition to the serious damage to buildings, living citrus trees in Texas and California have been damaged by termites, causing the death of recently planted trees. Cities are gradually adopting the recommendations of the Bureau of Entomology for the inclusion in mandatory building codes of brief provisions designed to prevent types of construction that favor termite damage. Honolulu, T. H.; Pasadena, Long Beach, and San Diego, Calif.; and New Orleans, La., have such provisions in their codes. The Termite Investigations Committee of the University of California is making an extensive study of the problem and in the near future will probably publish their recommendations. Eight southern counties in California have passed laws requiring commercial operators intending to undertake termite control to pass an examination as to their fitness for the work. If they pass the examination they are given certificates guaranteeing that they have a knowledge of the subject. (Forest Insects, Bureau of Entomology, U.S.D.A.)

Corrections - The note on the periodical cicada on page 341 of the Insect Pest Survey Bulletin should read "Brood III."

The note on Aegeria exitiosa Say in Georgia by O. I. Snapp dated October 18, referred to Sesia (Aegeria) pictipes G. & R.

Miscellaneous insects.

Four moths new to our North American fauna are recorded this year. They are Chrysoclista linneella Clerck on linden near New York City, Batodes angustiorana Haw. on yew in Victoria, B. C., Cnephasia longana Haw. reared on strawberry fruit in Oregon, and Epinotia subviridis Heinrich attacking cypress in Snohomish County, Wash. The last species was described in 1929 (Proc. U. S. Nat. Mus., Vol. 75, p. 15) from material collected at San Diego, Calif., and from British Columbia. The only other locality from which this species is recorded is Berkeley, Calif.

The apple fruit worm (Argyresthia conjugella Zell.) was observed for the first time in the Montesano section of Washington.

The apple maggot (Rhagoletis pomonella Walsh) was found for the first time in Georgia.

The first record of the boxwood leaf miner (Monarthropalpus buxi Labou.) in the Pacific Northwest was made at Seattle, Wash., on May 18 of this year.

An European weevil, Brachyrhinus cribricollis Gyll., has been discovered on citrus and privet in Los Angeles County, Calif.

A very unusual infestation of strawberry crowns by the larvae of Chrysobothris pubescens Fall was reported from Washington this year. A similar report was received from Oregon November, 1928.

Pseudococcus boninsis Kuwana was recorded for the first time in Mississippi, where it was collected at Melton late in March.

The dictyospermum scale (Chrysomphalus dictyospermi Morg.) was found for the first time on field grown avocados in Los Angeles County, near the city of Los Angeles. Heretofore this insect has ^{only} been known as a greenhouse pest, being particularly prevalent on Kentia palms. A survey shows the infestation to be rather general in the West Adams district of Los Angeles with one infestation in Hollywood.

The filbert bud mite (Eriophyes avellanae Nal.) was discovered in Stamford, Conn., this year. Heretofore this insect has been known in the United States only in Oregon and Washington, where it is a pest of considerable importance.

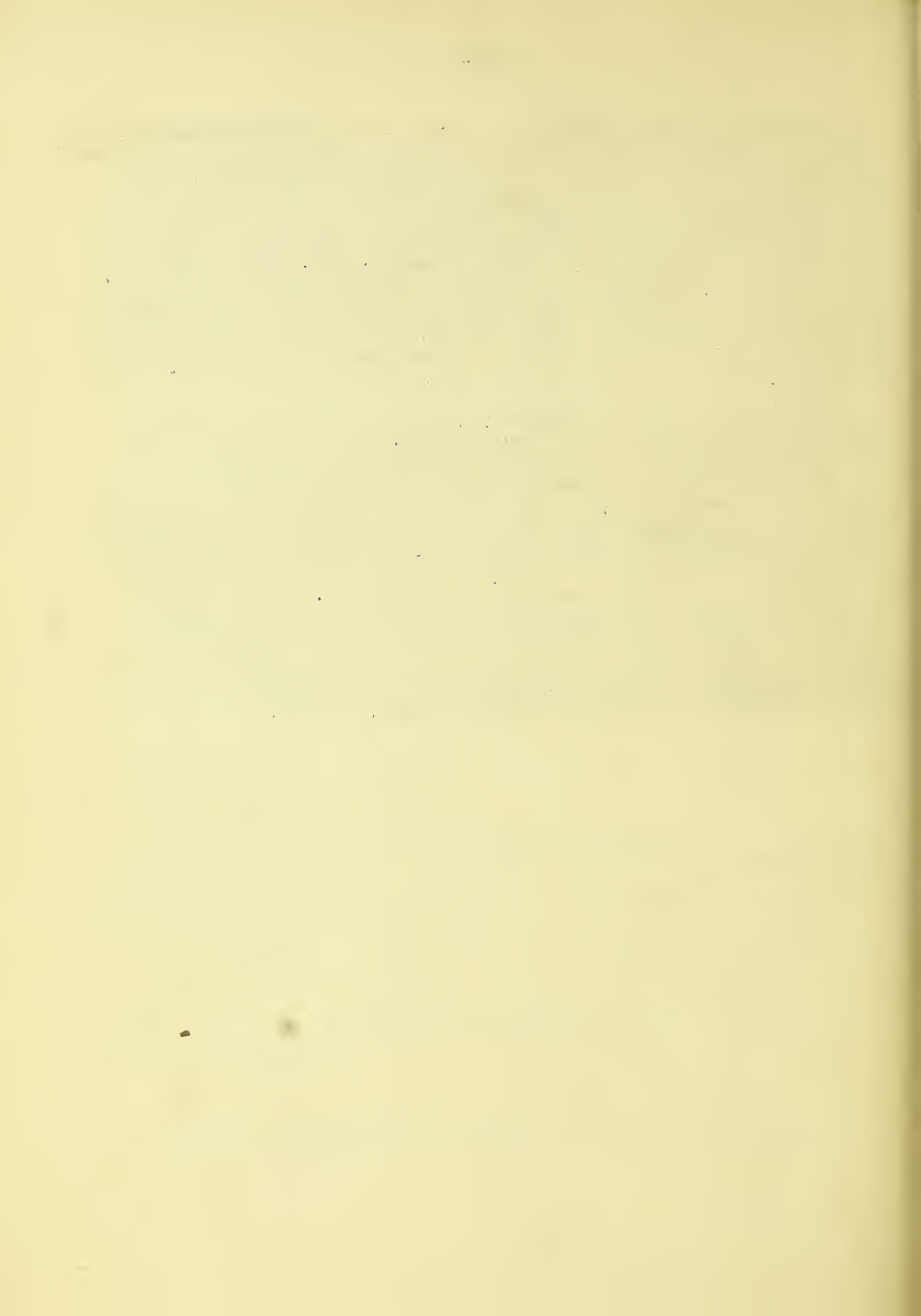
Two heretofore unrecorded species of springtails are doing commercial damage to mushrooms in Minnesota and Missouri, Achorutes sp. in Minnesota and Schotella sp. in Missouri.

On October 24 larvae of the pink boll worm (Pectinophora gossypiella Saund.) were discovered in gin trash near Mesa, Ariz. Subsequently other specimens were found near the town of Gilbert. Immediately, on the confirmation of the identification of these specimens, Maricopa and Pinal Counties were placed under quarantine on account of this pest. Coincident with this a large number of scouts were placed in this area to delimit the infestation. Scouting conducted during the remaining part of the year disclosed infestations at some twenty-five different places in the eastern end of the Salt River Valley and on the Indian Reservation near Sacaton. The infestation at the eastern end of the cultivated area was rather severe, in some fields 45 per cent of the bolls were infested and in a considerable area 25 per cent of the bolls were infested.

Intensive scouting throughout the Valley as well as the other cotton-producing area to the westward, including the Imperial Valley of California, failed to disclose the presence of the pest.

Early in January the State Horticultural Commissioners of Arizona established a non-cotton zone extending two miles beyond the outermost points of infestation. They also established a buffer zone extending three miles beyond the margin of the non-cotton zone. In the buffer zone restrictions are placed on the time which cotton can be planted.

Climatic conditions in the Salt River Valley are very favorable to the development of the pink boll worm and this pest presents an immediate menace to the production of cotton in this region. Its presence in this Valley also jeopardizes the cotton-producing areas to the west and the main cotton-producing area to the east.
(Plant Quarantine and Control Administration, U.S.D.A.)



AGRICULTURAL RESEARCH
GLEASON COLLEGE LIBRARY

THE INSECT PEST SURVEY BULLETIN

A periodical review of entomological conditions throughout the United States
issued on the first of each month from March to December, inclusive.

Volume 9

1929

Index

BUREAU OF ENTOMOLOGY
UNITED STATES
DEPARTMENT OF AGRICULTURE
AND
THE STATE ENTOMOLOGICAL
AGENCIES COOPERATING

INDEX TO INSECT PEST SURVEY BULLETIN

VOLUME 9, 1929

(Common names listed separately; see page 440.)

	<u>No.</u>	<u>Page</u>
Ablabia longana Haw. See		
Cnephasia longana Haw. - - - - -		
Achorutes armatus Nic. - - - - -	5	193
Achorutes sp. - - - - -	8	312, 340
	10	402
Aclerda obscura Parrott - - - - -	8	322
Acrididae - - - - -	1	9
	3	53, 55
	4	103, 106
	5	161, 163
	6	213, 217
	7	271, 274-275
	8	311, 313, 315-316
	9	359, 361
	10	384
Acrobasis caryae Grote - - - - -	6	239
Acrobasis caryivorella Rag. - - - - -	4	129
Acrobasis juglandis LeB. - - - - -	3	72
Acrobasis nebulella Riley. See		
Acrobasis juglandis LeB.		
Acronyctinae - - - - -	6	221
Adelphocoris rapidus Say - - - - -	4	140-141
Aedes communis DeG. - - - - -	4	153
Aedes excrucians Walk. - - - - -	4	153
Aedes sollicitans Walk. - - - - -	5	206
	6	264
Aedes taeniorhynchus Wied. - - - - -	6	264
Aedes trichurus Dyar - - - - -	4	153
Aegeria exitiosa Say - - - - -	2	35
	3	67-68
	4	124-125
	6	232
	7	285
	8	327
	9	366
	10	392, 401
Aegeria pictipes G. & R. See		
Sesia pictipes G. & R.		

<i>Agonoderus pallipes</i> Fab. - - - - -	2	47
	3	59
	5	162,169-170
<i>Agrilus anxius</i> Gory - - - - -	5	197
<i>Agrilus difficilis</i> Gory - - - - -	8	345
<i>Agrilus viridis</i> L. - - - - -	6	237
<i>Agriolimax agrestis</i> L. - - - - -	3	77
	5	185
	8	332
<i>Agriolimax campestris</i> Binney - - - - -	4	144
<i>Agriotes mancus</i> Say - - - - -	4	106
	6	218
<i>Agriotes</i> spp. - - - - -	10	385
<i>Agrotis c-nigrum</i> L. - - - - -	4	109
<i>Agrotis ypsilon</i> Rott. - - - - -	4	109
	5	165
	6	215,219
	7	272
	8	322
<i>Alabama argillacea</i> Hbn. - - - - -	1	21-22
	6	227
<i>Aleurothrixus howardi</i> Quaint. - - - - -	5	184
<i>Alsophila pometaria</i> Harr. - - - - -	1	11-12
	2	41
	3	54
	5	196-197
<i>Alypia octomaculata</i> Fab. - - - - -	5	203
	6	262
	7	288
<i>Amorbia</i> sp. - - - - -	2	31,37-38
<i>Amphicerus bicaudatus</i> Say - - - - -	3	65
	4	128
<i>Anabrus simplex</i> Hald. - - - - -	8	333
<i>Anaphoidea conotracheli</i> Girault - - - - -	5	178
<i>Anarsia lineatella</i> Zell. - - - - -	9	366
<i>Anasa tristis</i> DeG. - - - - -	4	143
	8	338
<i>Anastrepha ludens</i> Loew - - - - -	10	392-393
<i>Ancylis comptana</i> Frol. - - - - -	6	246
	7	293
	8	335
<i>Andricus cornigerus</i> O. S. - - - - -	2	42
<i>Andricus punctatus</i> Bass. - - - - -	2	42
<i>Anisota senatoria</i> S. & A. - - - - -	8	346
	9	377
<i>Anisota virginiana</i> Drury - - - - -	8	346
<i>Anomala binotata</i> Gyll. - - - - -	4	111
<i>Anomala orientalis</i> Waterh. - - - - -	3	51,56
	6	260
	10	390
<i>Anomala undulata</i> Melsh. - - - - -	3	72
<i>Anopheles crucians</i> Wied. - - - - -	3	92

Anopheles quadrimaculatus Say - - - - -	3	92
Anthrenomus eugenii Cano - - - - -	1	21
	6	247
	9	360, 370-371
Anthrenomus grandis Boh. - - - - -	1	21
Anthrenomus signatus Say - - - - -	3	52, 81
	5	188
Anthrenus scrophulariae L. - - - - -	1	28
Anticarsia gemmatilis Hbn. - - - - -	7	280
	8	311, 321-322
	9	363
	10	386
Antipus laticlavus Forst. - - - - -	6	226
Anuraphis bakeri Cowan - - - - -	4	116
	8	324
Anuraphis cardui L. - - - - -	3	70
Anuraphis maidi-radicis Forbes - - - - -	5	170
	6	261
	7	279
Anuraphis roseus Baker - - - - -	3	61, 62-63
	4	117
	5	162, 172-173
	6	214, 228
	7	273
	8	314
	10	390
Anuraphis viburnicola Gill. - - - - -	8	353
Aphidius testaceipes Cress. - - - - -	8	338
Aphiidae - - - - -	1	8, 10, 11, 15, 20
	3	51-52, 60-61, 73, 87
	4	103, 104, 116, 131, 143
	5	172, 204
	6	227
	7	281
	8	344
	10	390
Aphiochaeta sp. - - - - -	5	209
Aphis avenae Fab. See Rhopalosiphum		
prunifoliae Fitch		
Aphis brassicae L. (Misdet.) See		
Rhopalosiphum pseudobrassicae Davis		
Aphis cardui L. - - - - -	4	127
Aphis forbesi Weed - - - - -	2	39
	3	80-81
	6	246
Aphis gossypii Glov. - - - - -	4	142
	5	190
	6	249
	7	295
	8	338

Aphis houghtonensis Troop. See		
Myzus houghtonensis Troop		
Aphis medicaginis Koch - - - - -	3	60,73
Aphis middletonii Thos. - - - - -	6	261
Aphis nerii Fons. - - - - -	3	91
	4	152
Aphis pomi DeG. - - - - -	2	31,34
	3	61-62
	4	116-117
	5	172
	6	214,227-228
	7	273,281
	8	314
	9	364
	10	390
Aphis pseudobrassicae Davis. See		
Rhopalosiphum pseudobrassicae Davis		
Aphis setariae Thos. See		
Hysteroneura setariae Thos.		
Aphis sorbi Kalt. See		
Anuraphis roseus Baker		
Aphis sp. - - - - -	1	24
Aphis spiraeicola Patch - - - - -	3	74
	4	131
Apion metallicum Gerst. - - - - -	5	203
Araecerus fasciculatus DeG. - - - - -	1	28
Archips argyrospila Walk. - - - - -	3	64
	4	120-121
	5	174-175
	6	230
Archips obsoletana Walk. See		
Cacoecia obsoletana Walk.		
Argas miniatus Koch - - - - -	5	208
	6	267
Argyresthia conjugella Zell. - - - - -	8	312,325
	10	402
Aristotelia fragariae Busck - - - - -	8	336
Armadillidium vulgare Latr. - - - - -	3	89
	4	134
Arphia pseudonictana Thos. - - - - -	8	315
	9	361
Aserica castanea Arrow - - - - -	10	390
Aspidiotus ancylus Putn. - - - - -	5	197
Aspidiotus perniciosus Comst. - - - - -	1	12
	2	35-36
	3	52,66
	4	104,122
	5	176
	7	234
	8	326
	9	365
	10	391

Aspidiotus uvae Comst - - - - -	4	128
Asterolecanium variolosum Ratz. - - - - -	3	88
	4	148
Ataxia crypta Say - - - - -	1	21
Attelabus bipustulatus Fab. - - - - -	4	148
Aulacaspis pentagona Targ. - - - - -	1	14
	8	328
Aulacaspis rosae Bouche - - - - -	2	43
	3	71
Aulocara ellioti Thom. - - - - -	9	361
Autographa brassicae Riley - - - - -	1	19
	6	245
	9	371, 375
Autographa falcifera Kby. - - - - -	4	136
Balaninus auriger Casey - - - - -	4	146
	5	181
Balaninus caryae Horn - - - - -	2	36
	7	289
	8	330
Balaninus obtusus Blanch. - - - - -	4	146
	5	181
Barathra configurata Walk. - - - - -	3	53
	4	110
	5	165
	6	215
	7	271, 272, 275
	8	314, 317
Bathyplectes curculionis Thoms. - - - - -	4	115
Batodes angustiorana Haw. - - - - -	3	54
	6	214, 264
	10	402
Bibionidae - - - - -	1	17
Blapstinus fuliginosus Casey - - - - -	8	334
Blatta orientalis L. - - - - -	3	93
Blattidae - - - - -	3	93
Blepharida rhois Forst. - - - - -	4	153
Blissus leucopterus Say - - - - -	1	7, 9
	2	31, 34
	3	51, 57-58
	4	111
	6	214, 225
	9	363
	10	387
Brachyrhinus cribricollis Gyll. - - - - -	8	312, 348
	10	402
Brachyrhinus ovatus L. - - - - -	3	53, 86
	6	237
Brachyrhinus rugosostriatus Goeze - - - - -	8	335
Brachyrhinus sulcatus Fab. - - - - -	1	23
	3	91
	5	181
	6	237
	8	353

Brevicoryne brassicae L. - - - - -	1	19
	4	137
	5	187
	6	245-246
	7	272, 293
	8	334
	9	372
Bryobia praetiosa Koch - - - - -	3	93
	4	156
	5	183
Bucculatrix pomifoliella Clem. - - - - -	3	65
Byturus unicolor Say - - - - -	4	104, 127-128
	5	180
	6	237
	7	288
	10	393
Cacoecia cerasivorana Fitch - - - - -	5	179
	6	236
Cacoecia fervidana Clem. - - - - -	6	257
Cacoecia obsoletana Walk. - - - - -	6	236
Cacoecia rosaceana Harr. - - - - -	3	70
Cacoecia rosana L. - - - - -	5	204
Calendra granaria L. - - - - -	3	98
Calendra oryzae L. - - - - -	1	27-28
	3	98
	4	157
Caliroa aethiops Fab. - - - - -	4	152
	5	204
Calligrapha scalaris Lec. - - - - -	5	198
	6	255
	8	344
Callipterus juglandis Goers. - - - - -	8	329
Calpodes ethlius Cram. - - - - -	5	202
	6	261
Camnula pellucida Scud. - - - - -	4	106
	5	163
Camponotus caryae rasilis Wheeler - - - - -	3	96
Camponotus castaneus americanus Mayr - - - - -	3	96
Camponotus herculeanus pennsylvanicus DeG. - - - - -	5	208
Campoplex frustranae Cush. - - - - -	10	399
Cardiophorus tenebrosus Lec. - - - - -	5	164
Carpocapsa pomonella L. - - - - -	1	8, 11
	2	34-35
	3	52, 63-64
	4	103, 118-119
	5	162, 173-174
	6	228-229
	7	281-282
	8	312, 324-325
	9	364
	10	390

Cassidinae - - - - -	5	202
	6	251
Cathartus advena Waltl. - - - - -	3	99
Cecidomyia viticola O. S. - - - - -	8	329
Celama sorghiella Riley - - - - -	7	280
	9	363
Celerio lineata Fab. - - - - -	5	193
	8	331
Cephus cinctus Nort. - - - - -	3	53
	8	313, 319
Cerastipsocus venosus Burm. - - - - -	5	197
Ceratitis capitata Wied. - - - - -	3	51, 73
	4	103, 130-131
	5	161, 183
	6	213, 241
	7	271, 290-291
	8	311
	9	359, 368
	10	384
Ceratomia catalpae Boisd. - - - - -	6	254
	7	299
Ceratophyllus gallinae Schrank - - - - -	4	155
Ceresa bubalus Fab. - - - - -	3	65
	5	175
Cerotoma trifurcata Forst. - - - - -	3	52, 82-83
	4	140
	5	189-190
	6	226, 249
	7	295
Chaetocnema confinis Crotch - - - - -	3	84
Chaetopsis aenea Wied. - - - - -	3	83
Chaitophorus populella G. & P. - - - - -	6	258
Chalcodermus aeneus Boh. - - - - -	4	114, 140
	7	280
	8	311, 322
Chalepus dorsalis Thunb. - - - - -	6	256
Chelymorpha cassidea Fab. - - - - -	5	193
Chermes abietis L. - - - - -	8	347
Chermes cooleyi Gill. - - - - -	4	147
	6	258
Chermes pinicorticis Fitch - - - - -	4	149
	5	201
	8	347
Chermes strobilobius Kalt. - - - - -	5	199
Chilo simplex Butl. - - - - -	10	389
Chionaspis americana Johns. - - - - -	5	199
Chionaspis etrusca Leon. - - - - -	6	263
Chionaspis euonymi Comst. - - - - -	1	24
	3	90
	4	151
Chionaspis furfura Fitch - - - - -	4	123

Chionaspis pinifoliae Fitch - - - - -	1	25-26
	3	89
	4	149
	5	201
	9	377
Chorizagrotis auxiliaris Grote - - - - -	5	165
Chrysobothris mali Horn - - - - -	7	283
Chrysobothris pubescens Fall - - - - -	4	104, 138
	10	402
Chrysoclista linneella Clerck - - - - -	6	214, 255
	10	402
Chrysomphalus aurantii Mask. - - - - -	2	31, 36
	4	132
	5	184
Chrysomphalus dictyospermi Morg. - - - - -	10	402
Chrysomphalus ficus Ashm. - - - - -	4	132
Chrysomphalus obscurus Comst. - - - - -	5	194
Chrysomphalus tenebri cosus Comst. - - - - -	4	145
	5	194
Cicadellidae - - - - -	1	17
	3	65
	4	104, 141
	5	175
	8	325-326
Cimbex americana Leach - - - - -	6	259
Cimex lectularius L. - - - - -	1	26
	3	92
Cingilia catenaria Drury - - - - -	6	260
	7	288
Cirphis unipuncta Haw. - - - - -	5	166
	6	214, 224-225
	7	277
	8	319
	9	362
Citheronia regalis Fab. - - - - -	7	299
Clivina impressifrons Lec. - - - - -	5	170
Cnephasia longana Haw. - - - - -	6	214, 246
	10	402
Cnidocampa flavescens Walk. - - - - -	10	399
Coccidae - - - - -	1	14
Coccinellidae - - - - -	3	61
Coccophagus gurneyi Compere - - - - -	9	368
	10	393
Coccophagus sp. - - - - -	2	31, 37
Coccus elongatus Sign. - - - - -	5	202
Coccus hesperidum L. - - - - -	2	43
	5	203
Colaspis brunnea Fab. - - - - -	1	10
	5	170
	6	225
Colaspis favosa Say - - - - -	6	260

Coleophora fletcherella Fern. - - - - -	4	121
	8	330
Coleophora laricella Hbn. - - - - -	1	25
	5	199
Coleophora malivorella Riley - - - - -	4	121
	5	175
	7	283
Colopha ulmicola Fitch - - - - -	4	146
Conocephalus sp. - - - - -	8	315
Conotrachelus affinis Boh. - - - - -	7	290
Conotrachelus aratus Germ. - - - - -	3	72
	4	130
Conotrachelus juglandis Lec. - - - - -	5	182
Conotrachelus nenuphar Hbst. - - - - -	1	13
	2	35
	3	52, 68
	4	104, 125-126
	5	162, 178
	6	214, 215, 234, 235
	7	272, 287-288
	9	359, 367
	10	392
Conotrachelus retentus Say - - - - -	5	182
Conotrachelus sp. - - - - -	2	41
	7	289-290
Contarinia pyrivora Riley - - - - -	4	124
	5	177
	6	232
Contarinia tritici Kby. - - - - -	6	221
Coptodisca splendoriferella Clem. - - - - -	3	65
Corixidae - - - - -	8	354
Corythucha ciliata Say - - - - -	7	301
Corythucha cydonia Fitch - - - - -	6	227
Corythucha marmorata Uhl. - - - - -	7	303
Cossula magnifica Streck. - - - - -	1	14
Cotinis nitida L. - - - - -	3	81
	5	194
	8	332
Cotinis texana Casey - - - - -	7	290
Crambus caliginosellus Clem. - - - - -	5	194
Crambus spp. - - - - -	5	169
Craponius inaequalis Say - - - - -	5	180
	9	367
Crioceris asparagi L. - - - - -	4	138-139
	5	188
	7	293
	8	336
Crioceris duodecimpunctata L. - - - - -	5	188
Cryptolaemus montrouzieri Muls. - - - - -	10	393
Cryptolestes pusillus Schön. See : "See : "See : "		
Laemophloeus pusillus Schön.		
Cryptomyzus ribis L. See		
Myzus ribis L.		

Cryptotermes brevis Walk. - - - - -	1	27
Cryptothrips floridensis Watson - - - - -	6	254
Ctenocephalus canis Curt. - - - - -	3	92
	4	153
	6	265
	7	305
	8	353-354
Ctenocephalus felis Bouche - - - - -	3	92
	4	153
	6	265
	7	305
	8	353-354
Culex sp. - - - - -	8	354-355
Culicinae - - - - -	3	92
	5	206
	6	216, 264
	7	305
Culicoides furens Poey - - - - -	3	93
Culicoides sp. - - - - -	5	206
Curculio auriger Casey. See		
Balaninus auriger Casey		
Curculio obtusus Blanch. See		
Balaninus obtusus Blanch.		
Cylas formicarius Fab. - - - - -	10	395
Cyllene robiniae Forst. - - - - -	4	147
Dasyneura leguminicola Lint. - - - - -	4	116
	7	280-281
	9	359, 364
Datana integerrima G. & R. - - - - -	3	72
	4	129
	7	302
Datana ministra Drury - - - - -	6	230
	7	282, 299
	8	346
Dendroctonus barberi Hopk. - - - - -	10	400
Dendroctonus brevicomis Lec. - - - - -	10	400
Dendroctonus frontalis Zimm. - - - - -	5	201
	6	258
	7	300
	9	360, 377
	10	400
Dendroctonus monticolae Hopk. - - - - -	3	54
	10	400
Dendroctonus piceaperda Hopk. - - - - -	8	347
	10	400
Dendroctonus ponderosae Hopk. - - - - -	10	400
Dendroctonus pseudotsugae Hopk. - - - - -	3	54
	10	400
Dendroctonus sp. - - - - -	6	258
Dendroctonus valens Lec. - - - - -	4	148
Dermacenter variabilis Say - - - - -	3	95
Dermacenter venustus Banks - - - - -	3	54

<i>Dermestes cadaverinus</i> Fab. - - - - -	1	28
<i>Dermestidae</i> - - - - -	1	28
<i>Desmia funeralis</i> Hbn. - - - - -	4	128
<i>Dexia ventralis</i> Aldrich - - - - -	6	227
<i>Diabrotica balteata</i> Lec. - - - - -	1	8,17
	7	272,296
	8	352,345
	9	569
<i>Diabrotica duodecimpunctata</i> Fab. - - - - -	1	8,16
	2	35
	3	75-76
	4	114,141-142,144
	6	225,226
	8	320
<i>Diabrotica longicornis</i> Say - - - - -	7	271,279
	8	311,320-321
<i>Diabrotica soror</i> Lec. - - - - -	6	247
<i>Diabrotica</i> spp. - - - - -	8	345,351
	8	55
	8	311
<i>Diabrotica trivittata</i> Mann. - - - - -	3	83-84
	4	142
	8	345
<i>Diabrotica virgifera</i> Lec. - - - - -	8	321
	9	363
<i>Diabrotica vittata</i> Fab. - - - - -	3	75
	4	114,141-142
	5	190
	7	295
<i>Dialcurodes citri</i> Ashm. - - - - -	1	15
	2	32,37,38
	3	73
	4	131
	7	291
	8	312,350-331
	9	359,368-369
<i>Diaphania hyalinata</i> L. - - - - -	1	20
<i>Diaphania nitidalis</i> Stoll - - - - -	6	214,249
	7	295
	8	312,337-338
<i>Diaphania quadristigmalis</i> Guen. - - - - -	6	263
<i>Diartnronomyia hypogaea</i> Loew - - - - -	1	23-24
	2	42
	4	151
	6	261
<i>Diatraea lineolata</i> Walk. - - - - -	6	222
<i>Diatraea saccharalis</i> Fab. - - - - -	1	8,23
	3	85
	4	145
	6	251
	7	297
	8	341
	9	376
	10	396

<i>Diatraea zeacolella</i> Dyar - - - - -	5	169
	6	225-226
	7	279-280
<i>Dichomeris marginellus</i> Fab. - - - - -	7	300
<i>Diestrammena japonica</i> Blatch. - - - - -	1	23
<i>Dilachnus thujafolia</i> Theob. - - - - -	2	41
	3	87
<i>Diplotaxis excavata</i> Lec. - - - - -	3	72
<i>Diplotaxis frondicola</i> Blanch. - - - - -	4	153
<i>Disholcaspis mamma</i> Walsh - - - - -	4	148
<i>Dissosteira carolina</i> L. - - - - -	9	361
<i>Dolopius lateralis</i> Esch. - - - - -	5	164
<i>Dysdercus suturellus</i> H. S. - - - - -	1	22
<i>Dyslobus decoratus</i> Lec. - - - - -	4	127
<i>Dyslobus granicollis</i> Lec. - - - - -	4	127
<i>Eccoptogaster quadrispinosus</i> Say. See		
<i>Scolytus quadrispinosus</i> Say		
<i>Ecdytolopha insiticiiana</i> Zell. - - - - -	2	43
<i>Echidnophaga gallinacea</i> Westw. - - - - -	1	26
	3	95
	6	267
<i>Elasmopalpus lignosellus</i> Zell. - - - - -	4	145
	6	226
	7	279
	8	332
	9	373
<i>Elateridae</i> - - - - -	2	33
	3	51, 53, 55
	4	103, 106-107
	5	161, 163-164
	6	213, 218
	7	271, 275
	8	311, 316-317, 351-352
	10	585
<i>Eleodes opaca</i> Say - - - - -	1	10
	4	138
	10	385
<i>Ellopia fervidaria somniaria</i> Hulst - - - - -	8	346
<i>Ellopia fiscellaria</i> Guen. - - - - -	3	54
	6	215-216
	7	273
	8	313, 342
<i>Emphytus canadensis</i> Kby. - - - - -	6	264
	7	304
<i>Empoa rosae</i> L. - - - - -	6	237
<i>Empoasca fabae</i> Harr. - - - - -	3	78-79
	4	135
	5	186-187
	6	244-245
	7	280, 292
	8	333
	9	370

Empoasca mali LeB. - - - - -	6	230
	9	373
Empoasca rosae L. - - - - -	6	230
Empoasca unicolor Gill. - - - - -	6	230
Empria maculata Nort. - - - - -	6	246
	9	372
Enarmonia pyricolana Murtf. - - - - -	9	365
Endelomyia rosae Harr. See Caliroa aethiops Fab.		
Epargyreus tityrus Fab. - - - - -	8	345-346
Epicaerus imbricatus Say - - - - -	5	191
Epicauda cinerea Forst. - - - - -	7	303
Epicauda cinerea marginata Fab. - - - - -	6	242
	7	296
Epicauda ferruginea Say - - - - -	5	203
Epicauda lemniscata Fab. - - - - -	4	135
Epicauda pennsylvanica DeG. - - - - -	4	140
	7	303
Epicauda sp. - - - - -	6	242
Epicauda vittata Fab. - - - - -	6	243
Epilachna borealis Fab. - - - - -	4	139
	6	250
Epilachna corrupta Muls. - - - - -	5	52, 82
	4	104, 139-140
	5	162, 188-189
	6	214, 247-248
	7	272, 293-294
	8	336-337
	9	360, 372-373
	10	394-395
Epinotia subviridis Heinr. - - - - -	10	402
Epitrix cucumeris Harr. - - - - -	5	186-187, 191-192
	6	244
	7	292, 297
	8	333
Epitrix fusculea Crotch - - - - -	3	79
Epitrix parvula Fab. - - - - -	2	40
	3	85
	4	144
	5	193-194
	6	243, 251
	7	297
Epitrix subcrinita Lec. - - - - -	7	292
Epochra canadensis Loew - - - - -	4	129
	6	239
Erannis tiliaria Harr. - - - - -	3	54
Eriocampoides amygdalina Rohw. - - - - -	8	323
Eriocampoides limacina Retz. - - - - -	6	232
Eriophyes avellanæ Nal. - - - - -	5	162, 181-182
	10	402
Eriophyes oleivorus Ashm. - - - - -	4	131-132
Eriophyes pyri Pgst. - - - - -	1	8, 12-13
	4	124
	6	232

<i>Eriophyes thujae</i> Garman - - - - -	9	377
<i>Eriosoma americanum</i> Riley - - - - -	6	255
<i>Eriosoma lanigerum</i> Hausm. - - - - -	3	63
	6	228, 255
<i>Erythraspides pygmaea</i> Say - - - - -	6	238
<i>Erythroneura comes</i> Say - - - - -	6	238
	7	283
	8	323
	9	367
<i>Erythroneura obliqua</i> Say - - - - -	8	326
<i>Estigmene acraea</i> Drury - - - - -	3	85
	6	225
<i>Eubadizon</i> sp. - - - - -	7	285
<i>Euethola rugiceps</i> Lec. - - - - -	3	85
	4	113
<i>Eulia velutinana</i> Walk. - - - - -	8	351
<i>Eumerus</i> spp. - - - - -	6	263
	8	352-353
<i>Eumerus strigatus</i> Fallen - - - - -	3	91
	9	379
<i>Eumerus tuberculatus</i> Rond. - - - - -	4	152
<i>Euphoria inda</i> L. - - - - -	9	367
<i>Euphoria</i> spp. - - - - -	8	321
<i>Euschausia argentata</i> Pack. - - - - -	4	147
<i>Euschistus servus</i> Say - - - - -	3	70
<i>Euschistus tristigmus</i> Say - - - - -	3	70
<i>Eusimulium pecuarum</i> Riley - - - - -	3	93-94
	4	154
<i>Eusimulium</i> sp. - - - - -	5	208
<i>Eutettix tenellus</i> Baker - - - - -	3	84
	4	104, 142-143
	5	191
	7	296
	9	374
	10	395
<i>Eu Vanessa antiopa</i> L. - - - - -	7	299
<i>Euxoa messoria</i> Harr. - - - - -	5	166
<i>Euxoa ochrogaster</i> Guen. - - - - -	6	215, 220
<i>Evergestis rimosalis</i> Guen. - - - - -	4	137
<i>Feltia annexa</i> Treit. - - - - -	3	57
	5	165, 166
	8	322
<i>Fenusa dohrnii</i> Tisch. - - - - -	6	254
<i>Fenusa pumila</i> Klug - - - - -	5	198
<i>Fidia viticida</i> Walsh - - - - -	6	238
<i>Forficula auricularia</i> L. - - - - -	1	27
	4	156
	8	350
<i>Formica fusca</i> L. - - - - -	3	97
	5	208
<i>Formica rufa</i> L. - - - - -	5	208
<i>Formicidae</i> - - - - -	3	96

Frankliniella occidentalis Perg. - - - - -	9	364
Frankliniella tritici Fitch - - - - -	9	378
Galerucella xanthomelaena Schr. - - - - -	6	254
	8	344
Gargaphia tiliae Walsh - - - - -	7	300
Gastrophilus haemorrhoidalis L. - - - - -	2	44
	6	266
Geoderces melanothrix Kby. - - - - -	6	237
Geometridae - - - - -	2	41
	4	121
Geshna cannalis Quaint. - - - - -	3	90
	4	151
	5	203
	6	261
	7	303
Glycobius speciosus Say - - - - -	4	147
Glypta rufiscutellaris Cress. - - - - -	7	285
Goniurus proteus L. - - - - -	4	140
Gossyparia spuria Modeer - - - - -	3	88
	5	198-199
	6	255
	7	299
	8	344-345
Gossyparia ulmi L. See		
Gossyparia spuria Modeer		
Gracilaria syringella Fab. - - - - -	4	151
	5	204
	6	262
Gryllidae - - - - -	4	104, 134
	7	292
Gryllotalpa borealis Burm. See		
Gryllotalpa hexadactyla Perty		
Gryllotalpa hexadactyla Perty - - - - -	3	76
Gryllus assimilis Fab. - - - - -	6	218
	8	334, 338
	9	369, 375
Haematobia irritans L. - - - - -	3	94
	4	154
	5	207
	6	265-266
	7	305
	8	354
Haematopinus eurysternus Nitzsch - - - - -	4	154
Halisidota argentata Pack. See		
Euschausia argentata Pack.		
Haltica bimarginata Say - - - - -	4	150
Haltica chalybea Ill. - - - - -	3	71
	5	180
Haltica ignita Ill. - - - - -	3	81
Haltica ulmi Woods - - - - -	4	146
Halticinae - - - - -	1	20
Halticotoma valida Reut. - - - - -	4	152

Harmolita grandis Riley	5	161,167
	6	213,221
	10	387
Harmolita tritici Fitch	8	319
Harmologa fumiferana Clem.	3	54
	5	201
	6	216,258
	7	301
	8	347
	9	378
	10	399
Harrisina brillians B. & McD.	6	238
Heliothis obsoleta Fab.	3	58
	4	103,111-112
	5	161,168
	6	213,223-224
	7	277-278
	8	320
	9	362-363
	10	387-388
Heliothis virescens Fab.	4	144
	5	194
Heliothrips fasciatus Perg.	8	337
Heliothrips femoralis Heeger	5	203
Hellula undalis Fab.	1	18
	4	133
	8	339
	9	371
Hemerocampa leucostigma S. & A.	3	86
	5	195-196
	6	253
	7	273,297
	8	341
	10	397
Hemerocampa pseudotsugata McD.	6	216
	7	272,297-298
	10	397
Hemerocampa sp.	6	216
Hemerophila pariana Clerck	5	175
	6	215
	7	273,283
Hemichionaspis aspidistrae Sign.	2	43
Hemileuca oliviae Ckll.	3	60
	5	162,171
Herse cingulata Fab.	7	297
Heterocampa bilineata Pack.	8	313,343
Heteroderes laurentii Guer.	4	103,107
	8	316
	10	385
Heteroderes sp.	3	55
Hippelates sp.	4	154

Hippodamia convergens Guer. - - - - -	2	40
	9	374
Hippopsis lemniscata Fab. - - - - -	8	350
Homaledra sabalella Chambers - - - - -	1	24
Homalodisca sp. - - - - -	4	133
Hoplia trivialis Harold - - - - -	3	69
Horistonotus uhlerii Horn - - - - -	3	56
	4	107
	5	163
	8	316
	10	385
Hylemyia antiqua Meig. - - - - -	4	142
	5	191
	6	215, 250
Hylemyia brassicae Bouche - - - - -	4	137
	5	187
	6	215, 245
	7	293
	8	335
Hylemyia cilicrura Rond. - - - - -	3	53, 59, 83
	4	133
	5	162, 184-185
	10	395
Hypera punctata Fab. - - - - -	3	60
	5	171
Hypermallus villosus Fab. - - - - -	3	87
	6	256
Hyphantria cunea Drury - - - - -	5	182
	6	216, 239
	7	272, 273, 289, 298-299
	8	312, 329-330
Hypoderma bovis DeG. - - - - -	4	154
	5	206-207
	6	265
Hypoderma lineatum DeVill. - - - - -	2	32, 44-45
	5	206-207
	6	265
Hypoderma spp. - - - - -	5	206
Hyponomeuta malinellus Zell. - - - - -	7	283
Hysteroneura setariae Thos. - - - - -	3	70
	4	127
	6	236
Icerya purchasi Mask. - - - - -	1	14, 25
	3	74
	4	132
	5	176
Ichthyura inclusa Hbn. - - - - -	6	259
Illinoia pisi Kalt. - - - - -	1	11
	2	39
	3	59-60
	4	115
	8	313
	10	393

<i>Illinoia solanifolii</i> Ashm. - - - - -	2	43
	3	84, 91
	4	135
	6	244
	8	335
<i>Illinoia solanifolii creeli</i> Baker - - - - -	4	116
<i>Ips calligraphus</i> Germ. - - - - -	7	300-301
<i>Ips grandicollis</i> Eich. - - - - -	7	300-301
<i>Iridomyrmex humilis</i> Mayr - - - - -	2	46
	3	97
	6	267
	7	306
<i>Itonida catalpae</i> Comst. - - - - -	6	254
	7	299
<i>Janus integer</i> Nort. - - - - -	5	181
<i>Kaliosysphinga ulmi</i> Sund. - - - - -	5	198
<i>Kalotermes</i> sp. - - - - -	9	379
<i>Lachnus thujafalinus</i> Del G. - - - - -	6	260
<i>Laemophloeus pusillus</i> Schön. - - - - -	3	99
<i>Lampra brunneicollis</i> Grote - - - - -	4	128
<i>Laphygma exigua</i> Hbn. - - - - -	5	171
	6	241
<i>Laphygma frugiperda</i> S. & A. - - - - -	3	59
	4	103, 112-113
	5	161, 167-168
	6	214, 224
	7	278
	8	320
	9	359, 363
	10	386
<i>Lasioderma scoricorne</i> Fab. - - - - -	2	47
	3	98
	7	307
<i>Lasius interjectus</i> Mayr - - - - -	2	46
	3	97
<i>Laspeyresia caryana</i> Fitch - - - - -	2	36
	6	240
	7	289
	8	330
<i>Laspeyresia interstinctana</i> Clem. - - - - -	9	364
<i>Laspeyresia molesta</i> Busck - - - - -	1	13
	2	35
	3	52, 69-70
	4	125
	5	177-178
	6	214, 232-234
	7	271, 273, 285-287
	8	312, 327-328
	9	359, 365-366
	10	391
<i>Laspeyresia nigricana</i> Steph. - - - - -	9	373
<i>Lecanium corni</i> Bouche - - - - -	3	90
	6	261

Lecanium nigrofasciatum Perg. - - - - -	6	261
Lecanium quercifex Fitch - - - - -	3	88
	4	148
Lepidocyrtus cyaneus Tullb. - - - - -	5	193
Lepidoptera - - - - -	1	17,19
	6	249
Lepidosaphes beckii Newm. - - - - -	1	14-15
	3	74
Lepidosaphes ulmi L. - - - - -	3	67
	4	123
	5	176
	6	231
	8	352
Lepisma domestica Pack. - - - - -	3	98
Lepisma saccharina L. - - - - -	5	209
Leptinotarsa decemlineata Say - - - - -	2	39
	3	53, 77-78
	4	104, 134-135
	5	186
	6	214, 215, 243-244
	7	291
	9	370
	10	394
Leptocoris trivittatus Say - - - - -	2	41
	3	87
	9	376-377
Leptoglossus phyllopus L. - - - - -	3	51, 58
	7	290
Leucaspis japonica Ckll. - - - - -	1	25
Limax maximus L. - - - - -	5	185
Lina scripta Fab. - - - - -	3	89
	4	149
	5	201
Linopodes antennaepe Banks - - - - -	8	340
Liopus crassulus Lec. - - - - -	6	264
Liponyssus bacoti Hirst - - - - -	5	206
Liponyssus silviarum C. & F. - - - - -	2	45-46
Listroderes apicalis Waterh. - - - - -	1	16
Listroderes obliquus Gyll. - - - - -	1	8, 16
	2	31, 38-39
	3	52, 75
	4	133
	9	360, 369
	10	396
Lithocolletis conglomeratella Zell. - - - - -	6	257
Lithocolletis tremuloidella Braun - - - - -	4	149
Lixus concavus Say - - - - -	5	193
Locustidae - - - - -	7	284
Lonchaea chalybea Wied. - - - - -	1	15
Longistigma caryae Harr. - - - - -	6	240, 259
	9	378
Longitarsus menthaphagus Gentner - - - - -	8	339
Lophyrus abietis Harr. - - - - -	6	257

<i>Loxostege similalis</i> Guen. - - - - -	4	136
	5	169
	6	242
	7	281
	8	312, 323-324
<i>Lucilia caesar</i> Meig. - - - - -	2	46
<i>Ludius inflatus</i> Say - - - - -	5	164
<i>Luperodes varicornis</i> Lec. - - - - -	5	170
	6	226
<i>Lycophotia astricta</i> Morr. - - - - -	4	128
<i>Lycophotia margaritosa saucia</i> Hbn. - - - - -	3	56
	8	318
<i>Lycophotia occulta</i> L. - - - - -	4	128
<i>Lyctus</i> sp. - - - - -	1	27
	2	46-47
<i>Lygidea mendax</i> Reut. - - - - -	4	122
<i>Lygus pratensis</i> L. - - - - -	1	13
	3	76
	4	124
	8	314, 349-350
	9	365
<i>Lynchia maura</i> Bigot - - - - -	3	95
	4	105, 155
	8	355
<i>Macrobasis immaculata</i> Say - - - - -	7	303
<i>Macrobasis unicolor</i> Kby. - - - - -	5	185-186
<i>Macrocentrus ancylivora</i> Rohw. - - - - -	7	285
<i>Macrocentrus delicatus</i> Cress. - - - - -	7	285
<i>Macrocentrus</i> sp. - - - - -	7	285
<i>Macroductylus subspinosus</i> Fab. - - - - -	5	205
	6	237-238
<i>Macronoctua onusta</i> Grote - - - - -	4	151
	5	203
	6	262
	7	304
	8	351
<i>Macrosiphoniella sanborni</i> Gill. - - - - -	3	90
	9	378
<i>Macrosiphum granarium</i> Kby. - - - - -	3	51, 58
<i>Macrosiphum kaltenbachii</i> Schout. - - - - -	4	143
<i>Macrosiphum rosae</i> L. - - - - -	3	91
	4	153
<i>Macrosiphum rosaefolium</i> Theob. See		
<i>Illinoia solanifolii</i> Ashm.		
<i>Macrosiphum rudbeckiae</i> Fitch. - - - - -	8	351
<i>Macrosiphum sanborni</i> . See		
<i>Macrosiphoniella sanborni</i> Gill.		
<i>Macrosiphum solanifolii</i> Ashm. See		
<i>Illinoia solanifolii</i> Ashm.		
<i>Magdalis armicollis</i> Say - - - - -	3	88

Malacosoma americana Fab. - - - - -	2	40
	3	52, 64
	4	119-120
	5	174
	6	229
	10	391
Malacosoma disstria Hbn. - - - - -	4	120
	5	196
	6	216, 252-253
	10	399
Malacosoma fragilis Stretch - - - - -	6	252
	8	312, 342
	10	399
Malacosoma pluvialis Dyar - - - - -	4	120
	6	252-253
	10	399
Malacosoma spp. - - - - -	4	120
	6	216
Manestra picta Harr. - - - - -	6	242
	8	314, 350
Mansonina perturbans Walk. - - - - -	3	92
Mecas inornata Say - - - - -	5	205
	6	259
Mecas saturnina Lec. - - - - -	6	259
Megachile brevis Say - - - - -	6	256
Megalopyge opercularis S. & A. - - - - -	8	354
Megilla maculata DeG. - - - - -	7	279
Melanolestes picipes H. S. - - - - -	3	92
Melanoplus atlantis Riley - - - - -	4	106
	5	163
	6	217
	7	274
	8	315, 316
Melanoplus bivittatus Say - - - - -	4	106
	5	163
	6	217
	7	274
	8	315, 316
	9	361
Melanoplus differentialis Thos. - - - - -	4	106
	7	274
	8	315
Melanoplus femur-rubrum DeG. - - - - -	6	217
	7	274
	8	315
	9	361
Melanotus communis Gyll. - - - - -	6	218
Melanotus cribulosus Lec. - - - - -	6	218
	7	275
Melanotus fissilis Say - - - - -	5	163
	6	218

Melanotus oregonensis Lec. - - - - -	5	164
Melanotus sp. - - - - -	4	106
	5	163
	8	316
	10	385
Melanoxantherium smithae Monell - - - - -	8	348
Melasoma scripta Fab. See		
Lina scripta Fab.		
Melittia satyriniformis Hbn. - - - - -	6	249-250
	7	295
Meloidae - - - - -	6	242
Melophagus ovinus L. - - - - -	3	94
Merodon equestris Fab. - - - - -	6	263
	8	352
Meromyza americana Fitch - - - - -	7	272
Meropleon cosmion Dyar - - - - -	4	145
Metriona bivittata Say - - - - -	6	251
Mineola indigenella Zell. - - - - -	3	65
	9	364
Miselia purpurigera Walk. - - - - -	4	128
Mollusca - - - - -	2	31,40
	3	85
	5	185
Monarthropalpus buxi Labou. - - - - -	4	105,150
	10	402
Monellia costalis Fab. - - - - -	3	71
	6	240
Monellia sp. - - - - -	2	36
	3	71
Monocesta coryli Say - - - - -	6	255
Monochamus titillator Fab. - - - - -	3	88
Monocrepidius bellus Say - - - - -	1	19
Monocrepidius sp. - - - - -	4	106
Monocrepidius vespertinus Fab. - - - - -	4	144
Monomorium minimum Buck. - - - - -	3	97
	5	209
Monomorium minutum Mayr. See		
Monomorium minimum Buck.		
Monoptilota pergratialis Hulst - - - - -	5	188
	6	249
	8	337
Murgantia histrionica Hahn - - - - -	1	19
	2	39
	3	52,79-80
	4	137
	5	187
	7	293
	8	334-335
	10	394
Musca domestica L. - - - - -	2	44
	3	92

Myelois venipars Dyar - - - - -	7	291
Mylabridae - - - - -	1	20, 28
Mylabris obtectus Say - - - - -	3	99
Myriapoda - - - - -	3	77
Myzocallis fumipennellus Fitch - - - - -	3	71
	4	130
	6	240
	7	289
	8	330
Myzocallis kahawaluokalani Kirk. - - - - -	2	42
	7	304
	9	379
Myzus cerasi Fab. - - - - -	4	127
	5	179
	6	235-236
	7	273
Myzus houghtonensis Troop - - - - -	3	70-71
	6	239
	8	328
Myzus persicae Sulz. - - - - -	1	24-25
	2	43
	3	73, 78, 79
	4	136, 143
	8	338, 339
Myzus ribis L. - - - - -	4	129
	5	181
	6	239
Myzus rosarum Kalt. - - - - -	4	150
Nasutitermes morio Latr. - - - - -	1	27
Necrobis rufipes DeG. - - - - -	4	157
Nematus erichsoni Hartig - - - - -	5	199
	8	345
Neoclytus caprea Say - - - - -	4	146
Neodiprion banksiana Rohw. - - - - -	7	273
Neodiprion dyari Rohw. - - - - -	3	53, 88-89
	6	257
Neodiprion lecontei Fitch - - - - -	8	347
Neophasia menapia Feld. - - - - -	7	272, 301
Nephelodes emmedonia Cram. - - - - -	3	53
Nepticula sciricopeza Zell. - - - - -	6	256
Neuroterus saltatorius Hy. Edw. - - - - -	8	355
Neurotoma inconspicua Nort. - - - - -	6	236
Nezara viridula L. - - - - -	1	22
	3	70, 79
	4	140
	5	185
	6	242
	7	291
	8	332
	9	360, 369

Noctuidae - - - - -	1	7,9,19
	3	51,56-57
	4	109-110
	5	161,165-166
	8	322
	10	385
Nodonota clypealis Horn - - - - -	6	263
Nodonota puncticollis Say - - - - -	4	152
	6	231
Notolophus antiqua L. - - - - -	7	273
Nygma phaeorrhoea Don. - - - - -	5	195
	10	398
Nysius ericae Schill. - - - - -	4	115
	5	192
Oberca bimaculata Oliv. - - - - -	6	237
Oecanthus niveus DeG. - - - - -	4	128
Oestrus ovis L. - - - - -	7	272,306
Oligia fractilinea Grote - - - - -	5	165
Oncideres cingulatus Say - - - - -	9	376
Onicideres trinotatus Casey - - - - -	9	378
Oniscidae - - - - -	3	77
Onychiurus pseudarmatus Folsom - - - - -	3	58
Orchestes pallicornis Say - - - - -	4	122
	5	175-176
	8	312,326
Ormenis pruinosa Say - - - - -	7	303
Ormenis septentrionis Spin. - - - - -	6	261,262
Oxyptilus periscelidactylus Fitch - - - - -	5	180
Pachypsyla celtidismamma Riley - - - - -	6	255
Paleacrita vernata Peck - - - - -	1	11-12
	2	41
	3	64
	5	197
Pantomorus fulleri Horn - - - - -	1	13
	8	350
Papaipema nebris nitela Guen. - - - - -	3	59
	4	112
	5	168-169
	6	222-223
	7	278
	8	350
	10	387
Papaipema purpurifascia G. & R. - - - - -	7	303
Paralechia pinifoliella Chamb. - - - - -	8	347
Paratetranychus citri McGee - - - - -	8	331
Paratetranychus pilosus C. & F. - - - - -	1	8,12
	2	35
	3	65-66
	4	123
	6	231
	7	283
	8	314
	10	392

<i>Paria canolla</i> Fab. - - - - -	3	81
	8	335
<i>Paria canolla quadrinotata</i> Say - - - - -	8	335
<i>Pectinophora gossypiella</i> Saund. - - - - -	1	21
	9	360, 375
	10	403
<i>Pegomya hyoscyami</i> Panz. - - - - -	5	192
<i>Pemphigus acerifolii</i> Riley - - - - -	4	147
	5	200
<i>Pemphigus populi-transversus</i> Riley - - - - -	2	40
	9	375
<i>Pentatomidae</i> - - - - -	1	18
<i>Peregrinus maidis</i> Ashm. - - - - -	4	113
	7	279
<i>Peridroma saucia</i> Hon. See		
<i>Lycophotia margaritosa saucia</i> Hon.		
<i>Periphyllus lyropictus</i> Kess. - - - - -	5	200
	6	256
<i>Periphyllus negundinis</i> Thos. - - - - -	5	198
	6	254
<i>Peronea variana</i> Fern. - - - - -	7	273
	10	400
<i>Phalacrus politus</i> Muls. - - - - -	7	276
<i>Phasmidae</i> - - - - -	9	376
<i>Phelotes agonus</i> Say - - - - -	5	163
<i>Phelotes californicus</i> Mann. - - - - -	3	55-56
	4	103
<i>Phelotes canus</i> Lec. - - - - -	5	161
<i>Phelotes occidentalis</i> Cand. - - - - -	5	55
	4	107
	5	164
<i>Phelotes</i> spp. - - - - -	4	103
	10	385
<i>Phelotes venablosi</i> Wick. - - - - -	5	164
<i>Phloeosinus cristatus</i> Lec. - - - - -	8	344
	9	377
<i>Phloeosinus dentatus</i> Say - - - - -	4	147
<i>Phlyctaenia ferrugalis</i> Hon.* - - - - -	1	20
	4	150
<i>Pholus achemon</i> Drury - - - - -	7	288
<i>Phora</i> sp. - - - - -	8	340
<i>Phorbia rubivora</i> Coq. - - - - -	6	237
	8	328
<i>Phormia regina</i> Meig. - - - - -	6	266
<i>Phthorophloeus liminaris</i> Harr. - - - - -	5	179
<i>Phyllocoptes quadripes</i> Shim. - - - - -	5	200
	6	256

* Misdetermined - should be *Phlyctaenia rubigalis* Guer in the United States.

Phyllocoptes schlectendali Nal. - - - - -	5	204
	7	284
Phyllophaga arkansana Schaef. - - - - -	6	219
Phyllophaga fusca Froel. - - - - -	4	108
	5	164
	8	317
Phyllophaga gibbosa Burm. - - - - -	4	108
Phyllophaga hirticula Knoch - - - - -	4	108
Phyllophaga micans Knoch - - - - -	6	219
Phyllophaga praetermissa Horn - - - - -	6	219
Phyllophaga prunina Lec. - - - - -	6	219
Phyllophaga rubiginosa Lec. - - - - -	3	56
Phyllophaga spp. - - - - -	2	33
	3	56
	4	108-109
	5	161, 164
	6	218-219
	7	302
	8	313, 317
	9	361
	10	384
Phyllophaga tristis Fab. - - - - -	6	219
Phyllophaga ulkei Smith - - - - -	6	219
Phyllotoma nemorata Fallen - - - - -	5	197
	8	313, 343-344
Phyllotreta sinuata Steph. - - - - -	6	243
Phyllotreta vittata Fab. - - - - -	1	18
	4	138
	5	187-188
	6	243
	7	272
Phyllotreta vittata discodens Weise - - - - -	4	137-138
Phyllotreta zimmermanni Grotch - - - - -	4	137-138
Phylloxera caryaevallana Riley - - - - -	4	130
Phylloxera caryaecaulis Fitch - - - - -	4	147
Phylloxera devastatrix Perg. - - - - -	4	130
	5	182
	6	240
Phylloxera notabilis Perg. - - - - -	4	130
	5	182
	6	240
Phylloxera spp. - - - - -	3	88
	4	130
	5	182, 199
	6	240
	7	300
Physokermes piceae Schrank - - - - -	5	202
Phytalus sp. - - - - -	6	257
Phytomyza chrysanthemi Kowarz - - - - -	5	205
Phytonomus posticus Gyll. - - - - -	4	115
	5	171
	6	226
	8	311, 323
	10	385

Phytophaga destructor Say - - - - -	1	9
	2	31, 33-34
	3	51, 57
	4	103, 110-111
	6	213, 220-221
	7	271, 276
	8	311, 318-319
	9	359, 361-362
	10	386-387
Phytophaga ulmi Beut. - - - - -	5	198
Pieris rapae L. - - - - -	3	79
	4	136
	6	245
	7	292
	8	314, 334
	9	371
Pissodes deodarae Hopk. - - - - -	2	41
	3	87
	4	146
	5	198
Pissodes rotundatus Lec. - - - - -	8	347-348
Pissodes strobi Peck - - - - -	4	148
	7	301
	8	348
	10	401
Plagiodera versicolora Laich. - - - - -	4	105, 149-150
Plagionotus speciosus Say. See		
Glycobius speciosus Say		
Plodia interpunctella Hbn. - - - - -	1	27
Plusia simplex Guen. See		
Autographa falcifera Kby.		
Plutella maculipennis Curt. - - - - -	3	80
	8	334
Podosesia fraxini Luggor - - - - -	4	146
Podosesia syringae Harr. - - - - -	3	90
	7	304
	8	352
Pogonomyrmex badius Latr. - - - - -	3	97
Pogonomyrmex occidentalis Cress. - - - - -	5	208
Polistes spp. - - - - -	4	112
Pollenia rudis Fab. - - - - -	2	44
Polychrosis vitcana Clem. - - - - -	4	128
	8	312, 328
	9	367
Polyphylla spp. - - - - -	6	246
Pomphopoea sayi Lec. - - - - -	6	235
Pontia rapae L. See		
Pieris rapae L.		
Popillia japonica Newm. - - - - -	4	109
	5	164-165
	6	227
	10	389

Porosagrotis orthogonia Morr. - - - - -	4	110
	5	165
	6	213, 214, 220
Forthetria dispar L. - - - - -	5	162, 195
	7	273
	10	397-398
Frenolopis sp. - - - - -	5	209
Prionus laticollis Drury - - - - -	8	326
Prociphilus imbricator Fitch - - - - -	8	342-343
Prociphilus tessellatus Fitch - - - - -	5	200
Prodenia eridania Cram. - - - - -	5	166
Prodenia ornithogalli Guen. - - - - -	5	166
	8	318, 322
Frosena siberita Fab. - - - - -	6	227
Prosimulium pecuarum Riley. See		
Lusimulium pecuarum Riley		
Proteopteryx bolliana Sling. - - - - -	3	71-72
Protoparce quinquemaculata Haw. - - - - -	5	194
	8	334
	9	370
Protoparce sexta Johan. - - - - -	4	144
	5	194
	9	370
Protoparce spp. - - - - -	1	22
	5	194
Pseudaonidia duplex Okll. - - - - -	1	25
Pseudococcus boninsis Yuwana - - - - -	3	53, 85
	9	376
	10	402
Pseudococcus citri Risso - - - - -	3	73, 89-90
	9	379
Pseudococcus gahani Green - - - - -	2	37
	3	74
	8	331
	9	368
	10	393
Pseudococcus sp. - - - - -	8	351
Pseudophilippia quasintancii Okll. - - - - -	8	347
Pseudophyllinae - - - - -	1	15
Psyllia buxi L. - - - - -	4	150
Psyllia mali Schmid. - - - - -	3	54
	6	215
	7	273
Psyllia pyricola Foerst. - - - - -	3	67
	4	124
	5	176-177
	6	231-232
	7	284
	9	359, 365
Psylliodes punctulata Welsh. - - - - -	9	375
Pterochlorus viminalis Boyer - - - - -	9	378
Pteronidea ribesii Scop. - - - - -	5	180-181
	6	238-239

<i>Pteronius ventralis</i> Say - - - - -	6	259
<i>Ptinus fur</i> L. - - - - -	3	98
<i>Pulvinaria vitis</i> L. - - - - -	1	25
	4	148
	5	200
	6	256-257
	7	300
	8	346
<i>Pyrausta ainsliei</i> Hein. - - - - -	3	58-59
<i>Pyrausta nubilalis</i> Hbn. - - - - -	1	10
	3	53
	6	222
	7	279
	8	313, 320
	10	388-389
<i>Rasahus thoracicus</i> Stål - - - - -	8	388
<i>Reticulitermes flavipes</i> Kol. - - - - -	3	96
<i>Reticulitermes</i> spp. - - - - -	1	14, 26-27
	2	46
	3	95-96
	4	155-156
	6	267
	7	306
	8	355
	10	401
<i>Rhabdopterus picipes</i> Oliv - - - - -	6	231
<i>Rhagoletis cingulata</i> Loew - - - - -	5	179
	6	236
<i>Rhagoletis fausta</i> O. S. - - - - -	5	179
	6	236
<i>Rhagoletis juglandis</i> Cross. - - - - -	9	359, 368
<i>Rhagoletis pomonella</i> Walsh - - - - -	6	230-231
	7	271, 283-284
	8	312, 314, 325
	10	402
<i>Rhipicephalus sanguineus</i> Latr. - - - - -	3	94
	4	154-155
<i>Rhizoglyphus hyacinthi</i> Boisd. - - - - -	1	24
	4	151
	9	379
<i>Rhodites bicolor</i> Harr. - - - - -	4	153
<i>Rhopalosiphum prunifoliae</i> Fitch - - - - -	1	10
	3	51, 58, 61, 63
	4	117-118
	5	173
	9	364
<i>Rhopalosiphum pseudobrassicae</i> Davis - - - - -	1	16
	3	84
	7	272
	8	313, 338, 339
	9	373-374

Rhopobota naevana Kearf. - - - - -	6	262
Rhyacionia buoliana Schiff. - - - - -	5	201
Rhyacionia frustrana Comst. - - - - -	4	148-149
	6	257
	7	301
	10	399
Rhyacionia frustrana bushnelli Busck. See		
Rhyacionia frustrana Comst.		
Rhynchites bicolor Fab. - - - - -	5	205
Romalea microptera Beauv. - - - - -	4	106
	5	163
	6	217
	10	384
Saissetia hemisphaerica Targ. - - - - -	3	91
Samia cecropia L. - - - - -	5	195
Sannina uroceriformis Walk. - - - - -	2	36
Sarcoptes scabiei suis DeG. - - - - -	5	208
Scapteriscus acletus R. & H. - - - - -	1	17
	2	38
	3	76
	5	185
	9	370
Scapteriscus sp. - - - - -	4	134
	5	185
	8	332
	9	370
Scapteriscus vicinus Scud. - - - - -	4	134
	6	258
	8	333
	9	370
Schistoceros hamatus Fab. See		
Amphicerus bicaudatus Say		
Schizocerus ebenus Nort. - - - - -	6	251
	8	339
Schizura concinna S. & A. - - - - -	6	230
	7	282
	8	329
Schottella sp. - - - - -	8	312, 340
	10	402
Sciara sp. - - - - -	8	340
Sciaridae - - - - -	5	193
Sciopithes obscurus Horn - - - - -	6	237
	8	328, 348-349
Scirtes tibialis Guer. - - - - -	6	240
Scirtothrips citri Moul. - - - - -	4	131
	6	241
Scolothrips sexmaculatus Perg. - - - - -	9	367
Scolytus quadrispinosus Say - - - - -	3	72-73
	8	345
Scolytus ventralis Lec. - - - - -	10	401
Scutigera forceps Raf. - - - - -	3	98

<i>Scutigera</i> <i>immaculata</i> Newp. - - - - -	6	260
	7	303
<i>Selandria</i> <i>rosae</i> Ashm. See		
<i>Caliroa</i> <i>aethiops</i> Fab.		
<i>Sesia</i> <i>pictipes</i> G. & R. - - - - -	3	63
	6	236
	10	401
<i>Sesia</i> <i>scitula</i> Herr. - - - - -	6	240
<i>Sibine</i> <i>stimulca</i> Clem. - - - - -	6	265
<i>Simuliidae</i> - - - - -	3	53, 93
	4	155
<i>Simulium</i> <i>jenningsi</i> Malloch - - - - -	3	94
<i>Simulium</i> <i>meridionale</i> Riley - - - - -	6	266
<i>Simulium</i> <i>vittatum</i> Zett. - - - - -	5	208
<i>Siphonaptera</i> - - - - -	1	26
	3	92
<i>Sitodrepa</i> <i>panicca</i> L. - - - - -	3	90
<i>Sitotroga</i> <i>cerealicola</i> Oliv. - - - - -	7	306-307
<i>Solenopsis</i> <i>geminata</i> Fab. - - - - -	3	82, 97
	5	209
	8	331
	9	369
<i>Solenopsis</i> <i>sacvissima richteri</i> Forel - - - - -	6	241
<i>Sphenophorus</i> <i>aequalis</i> Gyll. - - - - -	3	59
<i>Sphenophorus</i> <i>parvulus</i> Gyll. - - - - -	5	170
<i>Sphenophorus</i> spp. - - - - -	4	113
	7	230
<i>Spilonota</i> <i>ocellana</i> Schiff. - - - - -	4	131
	6	230
<i>Stephanoderes</i> - - - - -	1	8, 15
<i>Stephanitis</i> <i>rhododendri</i> Horv. - - - - -	3	353
<i>Sternocerus</i> <i>paludatus</i> Casey - - - - -	5	190
<i>Stictocephala</i> <i>festina</i> Say - - - - -	3	33
	3	323
<i>Stilpnotia</i> <i>salicis</i> L. - - - - -	4	104, 149
	5	195
	6	216, 253
	8	313, 342
	10	398
<i>Stiretrus</i> <i>anchorage personatus</i> Germ. - - - - -	5	139
	6	243
<i>Stomoxys</i> <i>calcitrans</i> L. - - - - -	6	263
	7	305
	8	354
<i>Strigoderma</i> <i>arboricola</i> Fab. - - - - -	5	190
	6	227
<i>Synanthedon</i> <i>acerni</i> Clem. - - - - -	2	42
<i>Syntomidae</i> <i>opileis</i> Walk. - - - - -	5	204
<i>Syrphidae</i> - - - - -	3	61
<i>Systema</i> <i>elongata</i> Fab. - - - - -	8	243
<i>Systema</i> <i>frontalis</i> Fab. - - - - -	6	243

<i>Systena taeniata</i> Say - - - - -	5	192
	6	247
	9	374
<i>Tabanidae</i> - - - - -	6	266
	7	306
<i>Tabanus americanus</i> Forst. - - - - -	3	93
<i>Tabanus atratus</i> Fab. - - - - -	3	93
<i>Tabanus lasiophthalmus</i> Macq. - - - - -	5	207
<i>Tabanus lineola</i> Fab. - - - - -	3	93
<i>Tachinidae</i> - - - - -	7	274
<i>Tachypterellus quadrigibbus</i> Say - - - - -	6	215
	8	326
<i>Tarsonemus approximatus narcissi</i> Ewing - - -	6	263
<i>Tarsonemus pallidus</i> Banks - - - - -	7	293, 304
	8	349
<i>Tenebrio molitor</i> L. - - - - -	3	98
<i>Tenebroides mauritanicus</i> L. - - - - -	1	27
<i>Tetanops aldrichi</i> Hendel - - - - -	5	192
<i>Tetranychus pacificus</i> McG. - - - - -	6	260
	8	329
	9	367
<i>Tetranychus</i> sp. - - - - -	8	329
<i>Tetranychus telarius</i> L. - - - - -	1	22
	3	81, 89
	4	138
	5	202
	6	243, 259-260
	7	295, 302
	8	314, 349
<i>Thrips tabaci</i> L. - - - - -	1	20, 21
	2	31, 39-40
	3	83
	4	142
	5	191
	6	250
	7	296
	8	339
	9	378
<i>Thyridopteryx ephemeraeformis</i> Haw. - - - - -	2	40
	3	86
	4	145
	5	196
	6	253
	7	272, 298
	8	341
	10	397
<i>Thysanoptera</i> - - - - -	5	185
<i>Tibicen cinctifera</i> Ual. - - - - -	6	241

<i>Tibicina septendecim</i> L. - - - - -	3	86
	4	103, 145
	5	162, 194-195
	6	252
	8	341
	10	396, 401
<i>Timarcha intricata</i> Hald. - - - - -	6	246
<i>Tiphia</i> sp. - - - - -	4	108
<i>Tiphia vernalis</i> Rohw. - - - - -	6	227
<i>Tipulidae</i> - - - - -	3	77
	4	143
<i>Toumeyella liriodendri</i> Gmel. - - - - -	1	26
	7	301
<i>Toumeyella numismaticum</i> P. & McD. - - - - -	4	149
<i>Toxoptera graminum</i> Rond. - - - - -	1	7, 9-10
	2	34
	10	387
<i>Trachymyrmex septentrionalis obscurior</i> <i>seminole</i> Wheeler - - - - -	6	235
<i>Trama erigeronensis</i> Thos. - - - - -	6	261
<i>Trialeurodes packardii</i> Morrill - - - - -	8	336
<i>Trichobaris mucorea</i> Lec. - - - - -	5	186
<i>Trichodectes scalaris</i> Nitzsch - - - - -	2	45
<i>Trichogramma minutum</i> Riley - - - - -	6	251
	7	285, 297
	8	341
	10	396
<i>Trionymus boninsis</i> Kuw. See <i>Pseudococcus boninsis</i> Kuw.		
<i>Trirhabda brevicollis</i> Lec. - - - - -	5	184
<i>Trombicula irritans</i> Riley - - - - -	3	93
	5	206
	6	265
	7	305
<i>Tyloderma fragariae</i> Riley - - - - -	3	81
	6	246
<i>Tyloderma morbillosa</i> Lec. - - - - -	8	312, 335
<i>Typhlocyba pomaria</i> McAtee - - - - -	5	175
	8	325-326
<i>Typophorus viridicyaneus</i> Crotch - - - - -	5	193
<i>Tyroglyphidae</i> - - - - -	5	193
<i>Zeuzera pyrina</i> L. - - - - -	9	376
<i>Zophodia grossulariae</i> Riley - - - - -	4	129
<i>Xylobiops basilare</i> Say - - - - -	8	330
<i>Xylocopa virginica</i> Drury - - - - -	5	209
	6	267

We wish particularly to urge upon our collaborators the use of the common names accepted by the Association and which should be considered as official names by all American Economic Entomologists. These approved common names are indicated by the l. c. , a. n. o. (americano nomina officinale).

Achemon sphinx a.n.o.	Pholus achemon Drury
Alder flea beetle	Haltica bimarginata Say
Alfalfa thrips	Frankliniella occidentalis Perg.
Alfalfa weevil a.n.o.	Phytonomus posticus Gyll.
American dog tick a.n.o.	Dermacentor variabilis Say
Angoumois grain moth a.n.o.	Sitotroga cercal ella Cliv.
Apple and thorn skeletonizer	Hemerophila pariana Clerck
Apple aphid a.n.o.	Aphis pomi DeG.
Apple curculio a.n.o.	Tachypterellus quadrigibbus Say.
Apple flea weevil a.n.o.	Orchestes pallicornis Say
Apple fruit worm	Argyresthia conjugella Zell.
Apple grain aphid a.n.o.	Rhopalosiphum prunifoliae Fitch
Apple maggot a.n.o.	Rhagoletis pomonella Walsh
Apple redbug a.n.o.	Lygidea mendax Reut.
Apple twig borer a.n.o.	Amphicerus bicaudatus Say
Apple twig pruner	Hypermallus villosus Fab.
Arborvitae aphid	Lachnus thujaefalinus Del.G.
Argentine ant a.n.o.	Iridomyrmex humilis Mayr
Argus tortoise beetle a.n.o.	Chelymorpha cassidea Fab.
Armyworm a.n.o.	Cirphis unipuncta Haw.
Ash borer	Podosesia fraxini Luggar
Ash-gray blister beetle a.n.o.	Macrobasis unicolor Kby.
Asiatic beetle a.n.o.	Anomala orientalis Waterh.
Asiatic garden beetle	Aserica castanea Arrow
Asparagus beetle a.n.o.	Crioceris asparagi L.
Bagworm a.n.o.	Thyridopteryx ephemeraeformis Haw.
Banded ash borer	Neoclytus capraea Say
Banded cucumber beetle a.n.o.	Diabrotica balteata Lec.
Banded flea beetle a.n.o.	Systema taeniata Say
Bar-winged onion fly	Chaetopsis aenea Wied.
Bean leaf beetle a.n.o.	Cerotoma trifurcata Forst.
Bean leaf roller a.n.o.	Goniurus proteus L.
Bean thrips	Heliotrips fasciatus Perg.
Bean weevil a.n.o.	Mylabris obtectus Say
Bedbug a.n.o.	Cimex lectularius L.
Beet armyworm a.n.o.	Laphygma exigua Hbn.
Beet leafhopper a.n.o.	Eutettix tenellus Baker
Bertha armyworm	Barathra configurata Walk.
Birch leaf miner	Fenusa pumila Klug
Birch leaf-mining sawfly	Phyllotoma nemorata Fallen
Biting cattle louse	Trichodectes scalaris Nitzsch
Black blister beetle a.n.o.	Epicauta pennsylvanica DeG.
Black blowfly	Phormia regina Meig.
Black cherry aphid a.n.o.	Myzus cerasi Fab.
Black corsair	Melanolestes picipes H. S.
Black-headed fireworm a.n.o.	Rhopobota naevana Hbn.

Black house ant	<i>Monomorium minimum</i> Buck.
Black vine weevil	<i>Brachyrhinus sulcatus</i> Fab.
Black walnut curculio	<i>Conotrachelus retentus</i> Say
Blue-grass billbug	<i>Sphenophorus parvulus</i> Gyll.
Boll weevil a.n.o.	<i>Anthonomus grandis</i> Boh.
Boxelder aphid a.n.o.	<i>Periphyllus negundinis</i> Thos.
Boxelder bug a.n.o.	<i>Leptocoris trivittatus</i> Say
Boxwood leaf miner a.n.o.	<i>Monarthropalpus buxi</i> Labou.
Boxwood psyllid	<i>Psyllia buxi</i> L.
Bronze birch borer a.n.o.	<i>Agrilus anxius</i> Gory
Brown dog tick a.n.o.	<i>Rhipicephalus sanguineus</i> Latr.
Brown-tail moth a.n.o.	<i>Nygma phaeorrhoea</i> Don.
Buffalo treehopper a.n.o.	<i>Qeresa bubalus</i> Fab.
Bulb mite	<i>Rhizoglyphus hyacinthi</i> Boisd.
Bumble flower beetle	<i>Euphoria inda</i> L.
Butternut curculio	<i>Conotrachelus juglandis</i> Lec.
Cabbage aphid a.n.o.	<i>Brevicoryne brassicae</i> L.
Cabbage looper a.n.o.	<i>Autographa brassicae</i> Riley
Cabbage maggot a.n.o.	<i>Hyalemyia brassicae</i> Bouche
Cabbage webworm a.n.o.	<i>Pellula undalis</i> Fab.
California red scale a.n.o.	<i>Chrysomphalus aurantii</i> Mask.
Camphor scale a.n.o.	<i>Pseudaonidea duplex</i> Ckll.
Camphor thrips a.n.o.	<i>Cryptothrips floridensis</i> Watson
Carpenter bee	<i>Xylocopa virginica</i> Drury
Carpet beetle a.n.o.	<i>Anthrenus scrophulariae</i> L.
Catalpa midge	<i>Itonida catalpae</i> Comst.
Catalpa sphinx a.n.o.	<i>Ceratomia catalpae</i> Boisd.
Cat flea a.n.o.	<i>Otenocephalus felis</i> Bouche
Cecropia moth a.n.o.	<i>Samia cecropia</i> L.
Cedar bark beetle	<i>Phloeosinus dentatus</i> Say
Celery looper a.n.o.	<i>Autographa falcifera</i> Kby.
Chain-spotted geometer a.n.o.	<i>Gingilia catenaria</i> Drury
Changa a.n.o.	<i>Scapteriscus vicinus</i> Scud.
Chigger a.n.o.	<i>Trombicula irritans</i> Riley
Chinch bug a.n.o.	<i>Blissus leucopterus</i> Say
Chrysanthemum aphid a.n.o.	<i>Macrosiphoniella sanborni</i> Gill.
Chrysanthemum gall midge a.n.o.	<i>Diarthronomyia hypogaea</i> Loew
Chrysanthemum lacebug	<i>Corythucha marmorata</i> Uhl.
Cigar case bearer a.n.o.	<i>Coleophora fletcherella</i> Fern.
Cigarette beetle a.n.o.	<i>Lasioderma serricorne</i> Fab.
Citrophilus mealybug a.n.o.	<i>Pseudococcus gahani</i> Green
Citrus aphid	<i>Aphis spiraeicola</i> Patch
Citrus mealybug a.n.o.	<i>Pseudococcus citri</i> Rizzo
Citrus red spider	<i>Paratetranychus citri</i> McG.
Citrus rust mite a.n.o.	<i>Eriophyes oleivorus</i> Ashm.
Citrus whitefly a.n.o.	<i>Dialeurodes citri</i> Ashm.
Clear-winged grasshopper a.n.o.	<i>Camnula pellucida</i> Scud.
Clover aphid a.n.o.	<i>Anuraphis bakeri</i> Cowan
Clover head caterpillar a.n.o.	<i>Laspeyresia interstinctana</i> Clem.
Clover leaf weevil a.n.o.	<i>Hypera punctata</i> Fab.
Clover mite a.n.o.	<i>Bryobia praetiosa</i> Koch

Clover seed midge a.n.o.	<i>Dasyneura leguminicola</i> Lint.
Cluster fly a.n.o.	<i>Pollenia rudis</i> Fab.
Codling moth a.n.o.	<i>Carpocapsa pomonella</i> L.
Coffee-bean weevil a.n.o.	<i>Araecerus fasciculatus</i> DeG.
Coffee tree cricket	<i>Pseudophyllinae</i> .
Colorado corn root worm	<i>Diabrotica virgifera</i> Lec.
Colorado potato beetle a.n.o.	<i>Leptinotarsa decemlineata</i> Say
Columbine borer	<i>Papaipema purpurifascia</i> G. & R.
Common cattle grub	<i>Hypoderma lineatum</i> DeVill.
Corn ear worm a.n.o.	<i>Heliothis obsoleta</i> Fab.
Corn lantern fly	<i>Peregrinus maidis</i> Ashm.
Corn root aphid a.n.o.	<i>Anuraphis maidiradicis</i> Forbes
Corn root webworm a.n.o.	<i>Crambus caliginosellus</i> Clem.
Corn root worm a.n.o.	<i>Diabrotica longicornis</i> Say
Corn-silk beetle	<i>Luperodes varicornis</i> Lec.
Cotton leaf worm a.n.o.	<i>Alabama argillacea</i> Hbn.
Cotton plant bug	<i>Adelphocoris rapidus</i> Say
Cotton stainer a.n.o.	<i>Dysdercus suturellus</i> H. S.
Cottonwood leaf beetle a.n.o.	<i>Lina scripta</i> Fab.
Cottony-cushion scale a.n.o.	<i>Icerya purchasi</i> Mask.
Cottony maple scale a.n.o.	<i>Pulvinaria vitis</i> L.
Cowpea aphid a.n.o.	<i>Aphis medicaginis</i> Koch
Cowpea curculio	<i>Chalcodermus aeneus</i> Boh.
Cranberry root worm	<i>Rhabdopterus picipes</i> Oliv.
Crepe myrtle aphid	<i>Myzocallis kahawaluokalani</i> Kirk.
Cross-striped cabbage worm a.n.o.	<i>Evergestis rimosalis</i> Guen.
Currant aphid a.n.o.	<i>Myzus ribis</i> L.
Currant fruit fly a.n.o.	<i>Epochra canadensis</i> Loew
Currant stem girdler a.n.o.	<i>Janus integer</i> Nort.
Cyclamen mite a.n.o.	<i>Tarsonemus pallidus</i> Banks
Cypress twig borer	<i>Phloeosinus cristatus</i> Lec.
Dark cherry fruit fly	<i>Rhagoletis fausta</i> O. S.
Deodar weevil	<i>Pissodes deodarae</i> Hopk.
Diamond-back moth a.n.o.	<i>Plutella maculipennis</i> Curt.
Dog flea a.n.o.	<i>Ctenocephalus canis</i> Curt.
Douglas-fir beetle a.n.o.	<i>Dendroctonus pseudotsugae</i> Hopk.
Douglas-fir caterpillar	<i>Euschausia argentata</i> Pack.
Drug-store weevil a.n.o.	<i>Sitodrepa panicea</i> L.
Eastern lubber grasshopper a.n.o.	<i>Romalea microptera</i> Beauv.
Eastern spruce beetle a.n.o.	<i>Dendroctonus piceaperda</i> Hopk.
Eastern tent caterpillar a.n.o.	<i>Malacosoma americana</i> Fab.
Eggplant flea beetle a.n.o.	<i>Epitrix fuscula</i> Crotch
Eight-spotted forester a.n.o.	<i>Alypia octomaculata</i> Fab.
Elm cockscomb gall a.n.o.	<i>Colopha ulmicola</i> Fitch
Elm leaf beetle a.n.o.	<i>Galerucella xanthomelaena</i> Schr.
Elm leaf miner a.n.o.	<i>Kaliosysphinga ulmi</i> Sund.
Elm sawfly a.n.o.	<i>Cimbex americana</i> Leach
Elm scurfy scale a.n.o.	<i>Chionaspis americana</i> Johns.
English grain aphid a.n.o.	<i>Macrosiphum granarium</i> Kby.
Ermine moth a.n.o.	<i>Hyponomeuta malinellus</i> Zell.
Euonymus scale a.n.o.	<i>Chionaspis euonymi</i> Comst.
European corn borer a.n.o.	<i>Pyrausta nubilalis</i> Hbn.

European earwig a.n.o.	<i>Forficula auricularia</i> L.
European elm scale a.n.o.	<i>Gossyparia spuria</i> Modeer
European fruit lecanium	<i>Lecanium corni</i> Bouche
European hen flea	<i>Ceratophyllus gallinae</i> Schrank
European pine shoot moth a.n.o.	<i>Rhyacionia buoliana</i> Schiff.
European red mite a. n. o.	<i>Paratetranychus pilosus</i> C. & F.
European willow beetle	<i>Plagiodera versicolora</i> Laich.
Eye-spotted budmoth a.n.o.	<i>Spilonota ocellana</i> Schiff.
Fall armyworm a.n.o.	<i>Laphygma frugiperda</i> S. & A.
Fall canker worm a.n.o.	<i>Alsophila pometaria</i> Harr.
Fall webworm a.n.o.	<i>Hyphantria cunea</i> Drury
False chinch bug a.n.o.	<i>Nysius ericae</i> Schill.
Feather mite	<i>Liponyssus silviarum</i> C. & F.
Fern scale a.n.o.	<i>Hemichionaspis aspidistrae</i> Sign.
Filbert bud mite	<i>Eriophyes avellanae</i> Nal.
Fire ant a.n.o.	<i>Solenopsis geminata</i> Fab.
Fir sawfly	<i>Lophyrus abietis</i> Harr.
Fir scolytus	<i>Scolytus ventralis</i> Lec.
Flat grain beetle	<i>Cryptolestes pusillus</i> Schon.
Florida harvesting ant	<i>Pogonomyrex badius</i> Latr.
Florida red scale a.n.o.	<i>Chrysomphalus ficus</i> Ashm.
Foreign grain beetle	<i>Cathartus advena</i> Waltl.
Forest tent caterpillar a.n.o.	<i>Malacosoma disstria</i> Hbn.
Fowl tick a.n.o.	<i>Argas miniatus</i> Koch
Fruit tree leaf roller a.n.o.	<i>Archips argyrospila</i> Walk.
Fuller's rose beetle a.n.o.	<i>Pantomorus fulleri</i> Horn
Garden slug	<i>Agriolimax agrestis</i> L.
Garden webworm a.n.o.	<i>Loxostege similalis</i> Guen.
Giant aphid	<i>Longistigma caryae</i> Harr.
Giant root borer	<i>Prionus laticollis</i> Drury
Giant willow aphid	<i>Pterochlorus viminalis</i> Boyer
Giant skipper	<i>Epargyreus tityrus</i> Fab.
Girdled cicada	<i>Tibicen cinctifera</i> Uhl.
Gloomy scale a.n.o.	<i>Chrysomphalus tenebricosus</i> Comst.
Goldenglow aphid	<i>Macrosiphum rudbeckiae</i> Fitch
Golden oak scale	<i>Asterolecanium variolosum</i> Ratz.
Gooseberry fruit worm a.n.o.	<i>Zophodia grossulariae</i> Riley
Granary weevil a.n.o.	<i>Calendra granaria</i> L.
Grape berry moth a.n.o.	<i>Polychrosis viteana</i> Clem.
Grape curculio a.n.o.	<i>Craponius inaequalis</i> Say
Grape flea beetle a.n.o.	<i>Haltica chalybea</i> Ill.
Grape leaf folder a.n.o.	<i>Desmia funeralis</i> Hbn.
Grape leafhopper a.n.o.	<i>Erythroneura comes</i> Say
Grape plume moth a.n.o.	<i>Oxyptilus periscelidactylus</i> Fitch
Grape root worm a.n.o.	<i>Fidia viticida</i> Walsh
Grape sawfly a.n.o.	<i>Erythraspides pygmaea</i> Say
Grape scale a.n.o.	<i>Aspidiotus uvae</i> Comst.
Grape tube gall	<i>Cecidomyia viticola</i> O. S.
Great Basin tent caterpillar	<i>Malacosoma fragilis</i> Stretch
Green bottle fly	<i>Lucilia caesar</i> Meig.
Green bug a.n.o.	<i>Toxoptera graminum</i> Rond.
Greenhouse centipede	<i>Scutigera immaculata</i> Newp.

Greenhouse leaf tyer a.n.o.	<i>Phlyctaenia rubigalis</i> Guen.
Greenhouse sowbug	<i>Armadillidium vulgare</i> Latr.
Greenhouse stone cricket a.n.o.	<i>Diestrammena japonica</i> Blatch.
Green June beetle a.n.o.	<i>Cotinis nitida</i> L.
Green peach aphid a.n.o.	<i>Myzus persicae</i> Sulz.
Gypsy moth a.n.o.	<i>Porthetria dispar</i> L.
Hackberry nipple gall	<i>Pachypsylla celtidismamma</i> Riley
Harlequin bug a.n.o.	<i>Murgantia histrionica</i> Hahn
Hazelnut weevil	<i>Balaninus obtusus</i> Blanch.
Hemispherical scale a.n.o.	<i>Saissetia hemisphaerica</i> Targ.
Hemlock budworm	<i>Peronea variana</i> Fern.
Hemlock spanworm	<i>Ellopiia fiscellaria</i> Guen.
Hessian fly a.n.o.	<i>Phytophaga destructor</i> Say
Hickory bark beetle a.n.o.	<i>Scolytus quadrispinosus</i> Say
Hickory horned devil a.n.o.	<i>Citheronia regalis</i> Fab.
Hickory nut curculio	<i>Conotrachelus affinis</i> Boh.
Hickory phylloxera	<i>Phylloxera caryaecaulis</i> Fitch
Hickory shoot curculio	<i>Conotrachelus aratus</i> Germ.
Hickory shuck worm a.n.o.	<i>Laspeyresia caryana</i> Fitch
Hog mange mite	<i>Sarcoptes scabiei</i> suis DeG.
Hop flea beetle a.n.o.	<i>Psylliodes punctulata</i> Melsh.
Horned oak gall	<i>Andricus cornigerus</i> O. S.
Horn fly a.n.o.	<i>Haematobia irritans</i> L.
House centipede a.n.o.	<i>Scutigera forceps</i> Raf.
House fly a.n.o.	<i>Musca domestica</i> L.
Imbricated snout beetle a.n.o.	<i>Epicaerus imbricatus</i> Say
Imported currant worm a.n.o.	<i>Pteronidea ribesii</i> Scop.
Iris borer a.n.o.	<i>Macronoctua onusta</i> Grote
Japanese beetle a.n.o.	<i>Popillia pajonica</i> Newm.
Japanese maple scale	<i>Leucaspis japonica</i> Ckll.
Jumping bullet gall	<i>Neuroterus saltatorius</i> Hy. Edw.
Juniper webworm	<i>Dichomeris marginellus</i> Fab.
Knot-legged bulb fly	<i>Eumerus tuberculatus</i> Rond.
Larch case bearer a.n.o.	<i>Coleophora laricella</i> Hbn.
Larch sawfly a.n.o.	<i>Nematus erichsoni</i> Hartig
Larger canna leaf roller	<i>Calpodes ethlius</i> Cram.
Late strawberry slug	<i>Empria maculata</i> Nort.
Leaf crumpler a.n.o.	<i>Mineola indigenella</i> Zell.
Leaf-footed bug a.n.o.	<i>Leptoglossus phyllopus</i> L.
Leopard moth a.n.o.	<i>Zeuzera pyrina</i> L.
Lesser bulb fly a.n.o.	<i>Eumerus strigatus</i> Fallen
Lesser canna leaf roller	<i>Geshna cannalis</i> Quaint.
Lesser corn stalk borer a.n.o.	<i>Elasmopalpus lignosellus</i> Zell.
Lesser peach borer a.n.o.	<i>Sesia pictipes</i> G. & R.
Lilac borer a.n.o.	<i>Podosesia syringae</i> Harr.
Lilac leaf miner	<i>Gracilaria syringella</i> Fab.
Lima bean vine borer	<i>Monoptilota pergratialis</i> Hulst
Linden lacebug	<i>Gargaphia tiliae</i> Walsh
Locust borer a.n.o.	<i>Cyllene robiniae</i> Forst.
Locust leaf miner a.n.o.	<i>Chalepus dorsalis</i> Thunb.
Locust twig borer	<i>Ecdytolopha insiticiiana</i> Zell.
Long soft scale	<i>Coccus elongatus</i> Sign.

Long spruce cone gall	<i>Chermes cooleyi</i> Gill.
Manioc fly	<i>Lonchaea chalybea</i> Wied.
Maple bladder gall	<i>Phyllocoptes quadripes</i> Shim.
Maple borer	<i>Synanthedon acerni</i> Clem.
Maple nepticula	<i>Nepticula sericopeza</i> Zell.
Margined blister beetle a.n.o.	<i>Epicauta cinerea marginata</i> Fab.
Marguerite leaf miner	<i>Phytomyza chrysanthemi</i> Kowarz
Mealy flata	<i>Ormenis pruniosa</i> Say
Mediterranean fruit fly a.n.o.	<i>Ceratitis capitata</i> Wied.
Melon aphid a.n.o.	<i>Aphis gossypii</i> Glov.
Melon worm a.n.o.	<i>Diaphania hyalinata</i> L.
Mexican bean beetle a.n.o.	<i>Epilachna corrupta</i> Muls.
Mexican fruit worm	<i>Anastrepha ludens</i> Loew
Mint flea beetle	<i>Longitarsus menthaphagus</i> Gentner
Mormon cricket a.n.o.	<i>Anabrus simplex</i> Hald.
Nantucket pine moth	<i>Rhyacionia frustrana</i> Comst.
Narcissus bulb fly a.n.o.	<i>Merodon equestris</i> Fab.
New Mexico range caterpillar	<i>Hemileuca oliviae</i> Ckll.
Northern cattle grub	<i>Hypoderma bovis</i> DeG.
Northern mole cricket a.n.o.	<i>Gryllotalpa hexadactyla</i> Perty
Norway maple aphid	<i>Periphyllus lyropictus</i> Kess.
Nose botfly a.n.o.	<i>Gastrophilus haemorrhoidalis</i> L.
Oak knot gall	<i>Andricus punctatus</i> Bass.
Oak lecanium	<i>Lecanium quercifex</i> Fitch
Oak ugly nest tortricid	<i>Cacoecia fervidana</i> Clem.
Oblique-banded leaf roller a.n.o.	<i>Cacoecia rosaceana</i> Harr.
Oblique-banded strawberry leaf-roller ...	<i>Cacoecia obsoletana</i> Walk.
Oleander aphid	<i>Aphis nerii</i> Fons.
Onion maggot a.n.o.	<i>Hylemyia antiqua</i> Meig.
Onion thrips a.n.o.	<i>Thrips tabaci</i> L.
Orange-striped oak worm a.n.o.	<i>Anisota senatoria</i> S. & A.
Orange thrips a.n.o.	<i>Scirtothrips citri</i> Moulst.
Oriental cockroach a.n.o.	<i>Blatta orientalis</i> L.
Oriental fruit moth	<i>Laspeyresia molesta</i> Busck
Oriental moth a.n.o.	<i>Cnidocampa flavescens</i> Walk.
Oyster-shell scale a.n.o.	<i>Lepidosaphes ulmi</i> L.
Pacific red spider	<i>Tetranychus pacificus</i> McG.
Pale western cutworm a.n.o.	<i>Porosagrotis orthogonia</i> Morr.
Palm leaf skeletonizer	<i>Homaledra sabalella</i> Chambers
Pea aphid a.n.o.	<i>Illinoia pisi</i> Kalt.
Pea moth a.n.o.	<i>Laspeyresia nigricana</i> Steph.
Peach and plum slug	<i>Eriocampoides amygdalina</i> Rohw.
Peach bark beetle a.n.o.	<i>Phthorophloeus liminaris</i> Harr.
Peach borer a.n.o.	<i>Aegeria exitiosa</i> Say
Peach twig borer a.n.o.	<i>Anarsia lineatella</i> Zell.
Pear leaf blister mite a.n.o.	<i>Eriophyes pyri</i> Pgst.
Pear midge a.n.o.	<i>Contarinia pyrivora</i> Riley
Pear psylla a.n.o.	<i>Psyllia pyricola</i> Foerst.
Pear slug a.n.o.	<i>Eriocampoides limacina</i> Retz.
Pecan budmoth	<i>Proteopteryx bolliana</i> Sling.
Pecan case bearer a.n.o.	<i>Acrobasis juglandis</i> LeB. *

*This insect has long been misdetermined as Acrobasis indigenella nebulella Riley.

Pecan cossid	<i>Cossula magnifica</i> Streck.
Pecan nut case bearer a.n.o.	<i>Acrobasis caryae</i> Grote
Pecan sesia	<i>Sesia scitula</i> Harr.
Pecan weevil a.n.o.	<i>Balaninus caryae</i> Horn
Pepper weevil a.n.o.	<i>Anthonomus eugenii</i> Cano
Periodical cicada a.n.o.	<i>Tibicina septendecim</i> L.
Persimmon root borer	<i>Sannina uroceriformis</i> Walk.
Pickle worm a.n.o.	<i>Diaphania nitidalis</i> Stoll
Pigeon hippoboscid	<i>Lynchia maura</i> Bigot
Pine bark aphid	<i>Chermes pinicorticis</i> Fitch
Pine butterfly	<i>Neophasia menapia</i> Feld.
Pine leaf miner	<i>Paralechia pinifoliella</i> Chamb.
Pine leaf scale	<i>Chionaspis pinifoliae</i> Fitch
Pink boll worm a.n.o.	<i>Pectinophora gossypiella</i> Saund.
Pink sugarcane borer	<i>Meropleon cosmion</i> Dyar
Pistol case bearer a.n.o.	<i>Coleophora malivorella</i> Riley
Plains false wireworm a.n.o.	<i>Eleodes opaca</i> Say
Plum curculio a.n.o.	<i>Conotrachelus nenuphar</i> Hbst.
Plum web-spinning sawfly	<i>Neurotoma inconspicua</i> Nort.
Polka-dot wasp-moth	<i>Syntomeida epilais</i> Walk.
Poplar leaf miner	<i>Lithocolletis tremuloidella</i> Braun
Poplar leaf stem gall	<i>Pemphigus populi-transversus</i> Riley
Poplar mocha-stone moth	<i>Ichthyura inclusa</i> Hbn.
Potato aphid a.n.o.	<i>Illinoia solanifolii</i> Ashm.
Potato flea beetle a.n.o.	<i>Epitrix cucumeris</i> Harr.
Potato leafhopper	<i>Empoasca fabae</i> Harr.
Purple scale a.n.o.	<i>Lepidosaphes beekii</i> Newm.
Puss caterpillar	<i>Megalopyge opercularis</i> S. & A.
Putnam's scale a.n.o.	<i>Aspidiotus ancylus</i> Putn.
Raspberry cane borer a.n.o.	<i>Oberea bimaculata</i> Oliv.
Raspberry cane maggot a.n.o.	<i>Phorbia rubivora</i> Coq.
Raspberry fruit worm a.n.o.	<i>Byturus unicolor</i> Say
Rat mite	<i>Liponyssus bacoti</i> Hirst
Red-banded leaf roller	<i>Eulia velutinana</i> Walk.
Reddish elm snout beetle	<i>Magdalis armicollis</i> Say
Red-headed pine sawfly a.n.o.	<i>Neodiprion lecontei</i> Fitch
Red-humped caterpillar a.n.o.	<i>Schizura concinna</i> S. & A.
Red-legged ham beetle a.n.o.	<i>Necrobia rufipes</i> DeG.
Red-shouldered shot-hole borer	<i>Xylobiops basilaris</i> Say
Red spider	<i>Tetranychus telarius</i> L.
Red turpentine beetle a.n.o.	<i>Dendroctonus valens</i> Lec.
Resplendent shield bearer a.n.o.	<i>Coptodisca splendoriferella</i> Clem.
Rhododendron lacebug a.n.o.	<i>Stephanitis rhododendri</i> Horv.
Rhubarb curculio a.n.o.	<i>Lixus concavus</i> Say
Ribbed cocoon maker	<i>Buccatrix pomifoliella</i> Clem.
Rice weevil a.n.o.	<i>Calendra oryzae</i> L.
Rose aphid a.n.o.	<i>Macrosiphum rosae</i> L.
Rose chafer a.n.o.	<i>Macrodactylus subspinosus</i> Fab.
Rose curculio a.n.o.	<i>Rhynchites bicolor</i> Fab.
Rose leaf beetle	<i>Nodonota puncticollis</i> Say
Rose leafhopper a.n.o.	<i>Empoa rosae</i> L.
Rose sawfly a.n.o.	<i>Caliroa aethiops</i> Fab.

Rose scale a.n.o.	<i>Aulacaspis rosae</i> Bouche
Rose stem girdler	<i>Agrilus viridis</i> L.
Rosy apple aphid a.n.o.	<i>Anuraphis roseus</i> Baker
Rough bullet gall	<i>Disholcaspis mamma</i> Walsh
Rusty leaf mite	<i>Phyllocoptes schlectendali</i> Nal.
Rusty plum aphid a.n.o.	<i>Hystercneura setariae</i> Thos.
Saddle-back caterpillar a.n.o.	<i>Sibine stimulea</i> Clem.
Salt-marsh caterpillar a.n.o.	<i>Estigmene acraea</i> Drury
Sand wireworm a.n.o.	<i>Horistonotus uhlerii</i> Horn
San Jose scale a.n.o.	<i>Aspidiotus perniciosus</i> Comst.
Satin moth a.n.o.	<i>Stilpnotia salicis</i> L.
Say's blister beetle	<i>Pomphopoea sayi</i> Lec.
Scotch pine lecanium	<i>Toumeyella numismaticum</i> P. & McD.
Scurfy scale a.n.o.	<i>Chionaspis furfura</i> Fitch
Seed corn beetle	<i>Agonoderus pallipes</i> Fab.
Seed corn maggot a.n.o.	<i>Hylemyia cilicrura</i> Rond.
Seed springtail	<i>Onychiurus pseudarmatus</i> Folsom
Sheep tick a.n.o.	<i>Melophagus ovinus</i> L.
Short-nosed ox louse	<i>Haematopinus eurysternus</i> Nitzsch
Silverfish a.n.o.	<i>Lepisma saccharina</i> L.
Slender seed corn beetle	<i>Clivina impressifrons</i> Lec.
Small green rose aphid	<i>Myzus rosarum</i> Kalt.
Smartweed borer	<i>Pyrausta nainsliei</i> Heinr.
Smut beetle	<i>Phalacrus politus</i> Melsh.
Snowball aphid	<i>Anuraphis viburnicola</i> Gill.
Snowy tree cricket a.n.o.	<i>Oecanthus niveus</i> DeG.
Soft scale a.n.o.	<i>Coccus hesperidum</i> L.
Sorghum webworm a.n.o.	<i>Celama sorghiella</i> Riley
Southern corn stalk borer a.n.o.	<i>Diatraea zeacolella</i> Dyar
Southern green stink bug a.n.o.	<i>Nezara viridula</i> L.
Southern pine beetle a.n.o.	<i>Dendroctonus frontalis</i> Zimm.
Southern pine sawyer a.n.o.	<i>Monochamus titillator</i> Fab.
Southwestern pine beetle a.n.o.	<i>Dendroctonus barberi</i> Hopk.
Spinach leaf miner	<i>Pegomyia hyoscyami</i> Panz.
Spiny elm caterpillar	<i>Euvanessa antiopa</i> L.
Spiny rose gall	<i>Rhodites bicolor</i> Harr.
Spotted cucumber beetle a.n.o.	<i>Diabrotica duodecimpunctata</i> Fab.
Spring canker worm a.n.o.	<i>Paleacrita vernata</i> Peck
Spruce bud scale	<i>Physokermes piceae</i> Schrank
Spruce budworm a.n.o.	<i>Harmologa fumiferana</i> Clem.
Spruce gall aphid	<i>Chermes abietis</i> L.
Squash beetle a.n.o.	<i>Epilachna borealis</i> Fab.
Squash borer a.n.o.	<i>Melittia satyriniformis</i> Hbn.
Squash bug a.n.o.	<i>Anasa tristis</i> DeG.
Stable fly a.n.o.	<i>Stomoxys calcitrans</i> L.
Stalk borer a.n.o.	<i>Papaipema nebris nitela</i> Guen.
Sticktight flea a.n.o.	<i>Echidnophaga gallinacea</i> Westw.
Strawberry crown borer a.n.o.	<i>Tyloderma fragariae</i> Riley
Strawberry crown miner	<i>Aristotelia fragariae</i> Busck
Strawberry flea beetle a.n.o.	<i>Haltica ignita</i> Ill.
Strawberry leaf roller a.n.o.	<i>Ancyliis comptana</i> Frohl.
Strawberry root aphid a.n.o.	<i>Aphis forbesi</i> Weed

Strawberry root weevil	Brachyrhinus ovatus L.
Strawberry root worm a.n.o.	Paria canella Fab.
Strawberry weevil a.n.o.	Anthonomus signatus Say
Strawberry whitefly a.n.o.	Trialeurodes packardii Morrill
Striped blister beetle a.n.o.	Epicauta vittata Fab.
Striped cucumber beetle a.n.o.	Diabrotica vittata Fab.
Striped flea beetle	Phyllotreta vittata Fab.
Sugar beet root maggot	Tetanops aldrichi Hendel
Sugar beet thrips	Heliothrips femoralis Heeger
Sugar beet wireworm	Pheletes californicus Mann.
Sugarcane beetle a.n.o.	Euetheola rugiceps Lec.
Sugarcane borer a.n.o.	Diatraea saccharalis Fab.
Sugarcane mealybug	Pseudococcus boninsis Kuwana
Sugar-maple borer a.n.o.	Glycobius speciosus Say
Sumac flea beetle	Blepharida rhois Forst.
Sweet clover stem borer	Hippopsis lemniscata Fab.
Sweet-potato flea beetle a.n.o.	Chaetocnema confinis Crotch
Sweet-potato leaf beetle	Typophorus viridicyaneus Crotch
Sweet-potato sawfly	Schizocerus ebenus Nort.
Sweet-potato weevil a.n.o.	Cylas formicarius Fab.
Sycamore lacebug	Corythucha ciliata Say
Tamarisk scale	Chionaspis etrusca Leon.
Tarnished plant bug a.n.o.	Lygus pratensis L.
Terrapin scale a.n.o.	Lecanium nigrofasciatum Perg.
Thistle aphid a.n.o.	Anuraphis cardui L.
Three-cornered alfalfa hopper	Stictocephala festina Say
Tip moth	Rhyacionia frustrana Comst.
Tobacco budworm	Heliothis virescens Fab.
Tobacco flea beetle a.n.o.	Epitrix parvula Fab.
Tobacco wireworm	Monocrepidius vespertinus Fab.
Tomato stalk weevil	Trichobaris mucorea Lec.
Tomato worm a.n.o.	Protoparce sexta Johan.
Tulip tree scale	Toumeyella liriodendri Gmel.
Turkey gnat a.n.o.	Simulium meridionale Riley
Turnip aphid a.n.o.	Rhopalosiphum pseudobrassicae Davis
Twig girdler a.n.o.	Oncideres cingulatus Say
Two-lined prominent	Heterocampa bilineata Pack.
Two-spotted curculio	Attelabus bipustulatus Fab.
Ugly-nest caterpillar a.n.o.	Cacoecia cerasivorana Fitch
Variegated cutworm a.n.o.	Lycophotia margaritosa saucia Hbn.
Vegetable weevil a.n.o.	Listroderes obliquus Gyll.
Velvetbean caterpillar	Anticarsia gemmatilis Hbn.
Violet sawfly	Emphytus canadensis Kby.
Walnut caterpillar a.n.o.	Datana integerrima G. & R.
Walnut husk fly	Rhagoletis juglandis Cress.
Wavy-striped flea beetle	Phyllotreta sinuata Steph.
Western grape leaf skeletonizer	Harrisina brillans B. & McD.
Western pine beetle a.n.o.	Dendroctonus brevicornis Lec.
Western spotted cucumber beetle a.n.o. ..	Diabrotica soror Lec.
Western striped cucumber beetle	Diabrotica trivittata Mann.
Western tent caterpillar a.n.o.	Malacosoma pluvialis Dyar
Wheat joint worm a.n.o.	Harmolita tritici Fitch

Wheat midge a.n.o.	<i>Contarinia tritici</i> Kby.
Wheat stem sawfly a.n.o.	<i>Cephus cinctus</i> Nort.
Wheat straw worm a.n.o.	<i>Harmolita grandis</i> Riley
White-lined sphinx a.n.o.	<i>Celeria lineata</i> Fab.
White-marked spider beetle a.n.o.	<i>Ptinus fur</i> L.
White-marked tussock moth a.n.o.	<i>Hemerocampa leucostigma</i> S. & A.
White peach scale a.n.o.	<i>Aulacaspis pentagona</i> Targ.
White-pine weevil a.n.o.	<i>Pissodes strobi</i> Peck
Willow grove aphid	<i>Melanoxantherium smithae</i> Monell
Wood tick	<i>Dermacentor venustus</i> Banks
Woolly alder aphid a.n.o.	<i>Prociphilus tessellatus</i> Fitch
Woolly apple aphid a.n.o.	<i>Erisoma lanigerum</i> Hausm.
Woolly beech aphid	<i>Prociphilus imbricator</i> Fitch
Woolly elm aphid a.n.o.	<i>Eriosoma americanum</i> Riley
Woolly larch aphid	<i>Chermes strobilobius</i> Kalt.
Woolly maple leaf aphid	<i>Pemphigus acerifolii</i> Riley
Woolly pine scale	<i>Pseudophilipia quaintancii</i> Ckll.
Woolly whitefly a.n.o.	<i>Aleurothrixus howardi</i> Quaint.
Yellow ant	<i>Lasius interjectus</i> Mayr
Yellow meal worm a.n.o.	<i>Tenebrio molitor</i> L.
Yellow-necked caterpillar a.n.o.	<i>Datana ministra</i> Drury
Zebra caterpillar a.n.o.	<i>Mamestra picta</i> Harr.

